Environmental Resource Group

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November 22, 2005

John Jang
San Francisco Bay Region
California Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612

RE: Closure Report Addendum for Alfa Gas Station
5 Ashford Avenue, Mill Valley, California

Dear Mr. Wolf:

On behalf of Alfa Investments, Inc., Environmental Resource Group, Inc. (ERG) is submitting the attached addendum to a closure report issued by ERG in July 2005. The closure report, *"Closure Report, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California,"* evaluated groundwater impact below the *subject site* and residual soil contamination in the adjoining storm drainage ditch and tidal creek area.

In your review of the closure report presented by letter dated September 13, 2005, the Board requested a summary of all residual soil contamination remaining at the *subject site*, comparison of the on-site soil lead concentrations with lead concentrations in the drainage ditch and tidal creek area, and conclusions and recommendations. The attached report addresses these requests for further information.

Please call me at 415-381-6574 if you have any questions.

Sincerely Yours,
ENVIRONMENTAL RESOURCE GROUP

Ben Wells
President

cc with enclosures

Alfa Investments, Inc.

CLOSURE REPORT ADDENDUM

Alfa Gas Station
5 Ashford Avenue
Mill Valley, California

November 2005

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CLOSURE REPORT ADDENDUM

Alfa Gas Station
5 Ashford Avenue
Mill Valley, California

November 2005

Prepared for:

Alfa Investments, Inc.
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TABLE OF CONTENTS

SUBJECT **PAGE**

TABLE OF CONTENTS (CONTINUATION)

FIGURES

TABLES

ATTACHMENTS

1.0 INTRODUCTION

Environmental Resource Group, Inc. (ERG) was retained by Alfa Investments, Inc. (Alfa Investments) to prepare this technical report for the Alfa Gas Station at 5 Ashford Avenue in Mill Valley, Marin County, California (*subject site*, Plate 1). The *subject site* is an operating retail service station with a one (1)-story structure that houses an office and mini-mart store. The service station has an existing system of underground fuel storage tanks (USTs) connected via underground piping to two (2) islands of fuel dispensers. The attached Plate 2 is a site plan showing the main site features.

The triangular-shaped parcel is bound to the north by Ashford Avenue, south by East Blithedale Avenue and east by the intersection of the two roadways. A tidal creek extends along the west side of the *subject site* (Plate 2). A storm drainage ditch between the subject site and East Blithedale Avenue drains into the tidal creek. The tidal creek flows into Sausalito Canal, approximately 0.5 miles south of the *subject site*. Sausalito Canal extends into Richardson Bay and the San Francisco Bay.

In a technical reported dated July 2005 ("*Closure Report, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California"*), ERG argued for no further action at the *subject site* based on an evaluation of residual contaminants in groundwater and in the drainage ditch and tidal creek. By letter dated September 13, 2005, the lead regulatory agency, the San Francisco Bay Region, Regional Water Quality Control Board (SF Bay RWQCB) presented its review of the report and requested additional information. The Board requested a summary of all residual soil contamination remaining at the *subject site*, comparison of the on-site soil lead concentrations with lead concentrations in the drainage ditch and tidal creek area, and conclusions and recommendations as to whether or not it is appropriate to issue closure, or whether additional investigation and/or remediation is necessary. Attachment A presents a copy of the SF Bay RWQCB letter.

This addendum addresses the request made by the SF Bay RWQCB for additional information to the ERG closure report of July 2005.

2.0 RELEASE SCENARIOS

The *subject site* is an open case in the State's Leaking Underground Fuel Tank (LUFT) list and is under the oversight of the SF Bay RWQCB.

Two (2) separate release scenarios have been proposed for the *subject site* and vicinity:

- Storm water runoff and other discharges to the drainage ditch along the southwest side of the *subject site*. The drainage ditch, and tidal creek downstream, collect runoff via surface flow and storm water conveyance inlets and piping from an area that encompasses the *subject site*, Ashford Avenue, East Blithedale Avenue and vicinity. Potential sources of lead in drainage ditch and tidal creek sediments include leaded gas formerly dispensed at the service station and used in the past by vehicles circulating in city streets, past vehicle washing/detailing activities, and lead-bearing particulates from wheel-weight dust, lead-based paint, and dirt/sediment that collect with storm water runoff in the drainage ditch. Potential sources of medium- to heavy-weight petroleum hydrocarbons include automobile and product leakage and storm water runoff (ERG, July 2005).

  An assessment of the drainage ditch and tidal creek area was presented in ERG report dated July 2005.

- Subsurface releases of hydrocarbon products from the former USTs systems. The former USTs systems included two (2) side-by-side tanks each of 8,000-gallon capacity at the east end of the *subject site*; and four (4) tanks each of 10,000-gallon capacity in a tank farm north of the station building. The former fuel dispensers were located in the eastern portion of the *subject site* (Plate 2). In addition, there was a 1,000-gallon waste oil UST, in disuse since the early 1980's, northwest of the station building. All three (3) systems were excavated and removed in 1999 by Alfa Investments. Evidence that the USTs leaked product in the past was presented in technical reports documenting the tank removals (EGS, June 14, 1999; ERG, September 2001).

  Pursuant to the SF Bay RWQCB letter of September13, 2005, this addendum reviews past investigation and remediation completed at the *subject site*, evaluates and compares on-site contamination with residual contamination in the drainage ditch and tidal creek, and argues for no further remedial action based on a comparison of site data with environmental screening levels.

3.0 PAST INVESTIGATIONS OF LEAKING USTs

The *subject site* was first developed in the 1940's into a retail service station (SES, April 3, 1991; EGS, June 14, 1999). Past property owners and operators included Standard Oil Company, Redwood Oil Company and C&S Oil, Inc. In approximately 1982 when Redwood Oil Company acquired the property, the site had an USTs system of two (2) tanks each of 8,000-gallon capacity. In disuse at the time, a waste oil UST of 1,000-gallon capacity was located next to the northwest corner of the station building. In 1982, Redwood Oil Company installed a new USTs system of four (4) 10,000-gallon tanks north of the station building. Records indicate the two (2) 8,000-gallon USTs were abandoned in-situ when the 10,000-gallon USTs were installed. Alfa Investments acquired the property in 1999.

The ensuing summarizes past investigation and remediation activities pertaining to the former USTs.

3.1 Subsurface Investigation (September 1990)

Pursuant to a SF Bay RWQCB letter of August 7, 1990, Sierra Environmental Services (SES) conducted in September 1990 a subsurface investigation of the *subject site* on behalf of Redwood Oil Company. The investigation results were presented in a report by SES dated September 28, 1990, "*Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California.*"

On September 6 and 7, 1990, SES installed four (4) groundwater monitoring wells at the *subject site*. The wells, designated MW-1 to MW-4, are shown in Plate 2. Wells MW-1, MW-2 and MW-3 were set at approximately 14 feet below ground surface (feet bgs) and screened in the 2.5 to 14 feet depth interval. Well MW-4 was set at approximately 14.5 feet bgs and screened in the 5 to 14.5 feet depth interval (SES, September 28, 1990).

Soil samples were collected from the well borings for laboratory analyses, and the initial groundwater sampling event took place on September 12, 1990 (SES, September 28, 1990). The soil and groundwater samples were analyzed for total extractable petroleum hydrocarbons as diesel (TPHd) and as motor oil (TPHmo) via EPA Method 8015M, and total purgeable petroleum hydrocarbons as gasoline (TPHg) with benzene, toluene, ethylbenzene and total xylenes distinction via EPA Methods 8015M/8020. Additionally, the soil samples were analyzed for total lead via EPA Method 7421, and groundwater samples for organic lead via DHSC LUFT Method (SES, September 28, 1990).

The soil analytical results are summarized in the attached Table 1. The analytical results of soil samples indicated relatively low concentrations of petroleum hydrocarbons and lead. Maximum concentrations were reported at 7.5 milligram per kilogram (mg/kg) TPHd and 48 mg/kg TPHmo, and no significant concentrations of TPHg and BTEX. Lead in soil samples ranged from less than 0.2 to 27 mg/kg (SES, September 28, 1990).

The depth-to-water and analytical data for the initial groundwater samples collected on September 12, 1990 are summarized in the attached Table 2A. The initial analytical results identified petroleum hydrocarbons in all four (4) wells with maximum concentrations reported at Well MW-4. The analytical results for September 1990 indicated 14,000 microgram per liter (µg/L) TPHg, 1,800 µg/L TPHd and 3,930 µg/L total BTEX in Well MW-4. Groundwater analytical data are summarized in the attached Table 3.

3.2 Phase II Subsurface Investigation (February 1991)

In February 1991, SES installed five (5) additional groundwater monitoring wells, namely three (3) on-site wells (MW-5, MW-6 and MW-7) and two (2) off-site wells (MW-8 and MW-9). Well installation and sampling were presented in a report by SES dated April 3, 1991, *"Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford Avenue, Mill Valley, California."* Wells MW-5 to MW-8 were set at approximately 13.5 feet bgs and screened between 3.5 and 13.5 feet bgs. Well MW-9 was set at approximately 12 feet bgs and screened from 4 to 12 feet bgs (SES, April 3, 1991).

Investigation activities included the collection and laboratory analyses of soil samples from the well borings, and initial sampling of the new wells on February 20, 1991. The soil and groundwater samples were analyzed for TPHd and TPHmo via EPA Method 8015M and TPHg via BTEX distinction via EPA Methods 8015M/8020. The soil samples were additionally analyzed for total lead via EPA Method 7421 (SES, April 3, 1991).

The soil analytical results are presented in Table 1. Petroleum hydrocarbons, mainly in the oil to diesel range, and minor amounts of BTEX, were reported in soil samples collected from the borings for Wells MW-5, MW-6, MW-7 and MW-8. Lead concentrations in soil samples from the on-site well borings ranged from 3.6 to 9.8 mg/kg, similar in magnitude to the lead concentrations (3.3 to 17 mg/kg) in soil samples from the off-site borings (Table 1).

Depth-to-water and groundwater analytical data are presented in Table 2A and Table 3, respectively. Significant hydrocarbons in solution were reported in the groundwater sample from Well MW-7 at the east end of the two (2), 8,000-gallon USTs. The analytical results for February 1991 identified 1,100 µg/L TPHd, 390 µg/L TPHg and 4.1 µg/L total BTEX in Well MW-7 (SES, April 3, 1991).

3.3 Groundwater Monitoring and Sampling (March 1991 to June 1998)

Subsequent groundwater monitoring and sampling events were performed by SES on March 13, 1991; June 12, 1991; September 12, 1991; August 25, 1992; and April 27, 1993. The groundwater samples were analyzed for TPHd and TPHmo via EPA Method 8015M, and TPHg with BTEX distinction via EPA Methods 8015M/8020 (SES, July 10, 1991; October 7, 1991; May 26, 1993).

In 1998, EnviroNet Consulting, Inc. (EnviroNet) of Santa Rosa, California resumed groundwater monitoring and sampling at the *subject site*, completing two (2) events in 1998, the first on February 27 and the second on June 23. The groundwater sampling protocol was

unlike that used by SES and did not follow industry standards. According to EnviroNet, the wells were not purged and water parameters were not monitored prior to groundwater sampling. The groundwater samples essentially represented grab samples from the wells. The samples were submitted for laboratory analyses for TPHg with BTEX and MTBE distinction via EPA Methods 8015M/8020; TPHd and TPHmo via EPA Method 8015M, total oil and grease (TOG) via EPA Method 413.1, and dissolved lead via EPA Method 7421 (EnviroNet, April 1, 1998; August 24, 1998).

3.4 Tank Removals and Interim Remedial Action (March to August 1999)

Pursuant to letters dated May 26, 1998 and March 1, 1999 from the SF Bay RWQCB requesting technical reports and further investigation and remediation, Alfa Investments retained Environmental Geology Services (EGS) of Santa Rosa, California to document and collect samples during the removal of the four (4) 10,000-gallon USTs and two (2) 8,000-gallon USTs. The excavation and tank removals were performed between March and August 1999. The fuel USTs removal and sampling activities were presented in a report by EGS dated June 14, 1999, *"Interim Remedial Action, 5 Ashford Avenue, Mill Valley, California."*

On March 5, 1999, the two (2) 8,000-gallon tanks in the east portion of the *subject site* were exposed. Groundwater with free floating product was reported at four (4) to five (5) feet bgs in the tank pit. The tanks were removed on and following March 17, 1999 by Pacific Engineering and Petroleum, Inc. (Pacific Engineering) of Sacramento, California (EGS, June 14, 1999). Because of the presence of overt hydrocarbon-impacted soil around the removed tanks, the tank pit was over-excavated and advanced to north, east and south up to the property boundary. The excavation was also advanced west to within approximately ten (10) feet of the station building. Soil samples collected during the excavation and submitted for laboratory analyses were presented in EGS (June 14, 1999). Hydrocarbon concentrations in soil samples taken in March 1999 from the 8,000-gallon tanks excavation ranged up to 6,100 mg/kg TPHg, 317 mg/kg total BTEX and 40 mg/kg MTBE. Attachment B presents a summary of the soil analytical data presented in EGS (June 14, 1999).

The four (4) 10,000-gallon USTs north of the station building were excavated and removed on April 13, 1999 by Pacific Engineering (EGS, June 14, 1999). Analytical results of soil samples collected from the excavation ranged up to 19,000 mg/kg TPHd, 4,100 mg/kg TPHg and 136 mg/kg total BTEX (Attachment B). Following tank removal, over-excavation was performed in an effort to remove the hydrocarbon-impacted soil. Wells MW-1, MW-2, MW-3, MW-4 and MW-7 were destroyed during the over-excavation performed between March and August 1999 (EGS, June 14, 1999; ERG, September 2001).

Approximately 1,240 tons of hydrocarbon-impacted soil was excavated and off-hauled for disposition to the Forward Landfill (EGS, June 14, 1999; SF Bay RWQCB, May 26, 1999).

Because of the presence of floating product, dewatering of the excavations was performed and documented in EGS (June 14, 1999). According to EGS, approximately 22,600 gallons was removed by vacuum truck and off-hauled to a treatment facility between March 5 and

April 15, 1999. EGS (June 14, 1999) presented analytical data for grab samples of groundwater collected from the tank excavation. Analytical results of a groundwater sample taken on April 13, 1999 following the removal of the four (4) 10,000-gallon tanks indicated 34,000 µg/L TPHd and 4,100 µg/L total BTEX with no detectable levels of TPHg and MTBE above the elevated reporting limits of 10,000 µg/L for TPHg and 1,000 µg/L for MTBE. Another grab groundwater sample was collected on March 30, 1999 from the excavation in the eastern portion of the *subject site*. The analytical results indicated 170,000 µg/L TPHg, 9,010 µg/L total BTEX and 1,800 µg/L MTBE (EGS, June 14, 1999).

3.5 Groundwater Investigation (April 2001)

In December 2000 and on behalf of Alfa Investments, ERG prepared a work plan pursuant to the SF Bay RWQCB letter dated February 29, 2000. The work plan received conditional approval from the SF Bay RWQCB by letter dated March 22, 2001. The SF Bay RWQCB requested that soil sampling be performed in the drainage creek, sampling be performed at the former waste oil UST location, and the status of groundwater monitoring Wells MW-1, MW-2 and MW-3 be ascertained. The work plan was subsequently implemented by ERG and the investigation results presented in ERG report dated September 2001, *"Groundwater and Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Groundwater Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

ERG researched the history of the former waste oil UST that was located near the northwest corner of the station building. According to Mr. Underwood of the Marin County Environmental Health, the former 1,000-gallon waste oil tank was in disuse at the time of removal on August 17, 1999. Mr. Underwood reported that the tank was in very bad condition with lots of holes and that the tank was rinsed and off-hauled to a recycling facility for final disposition. Evidence of leakage including free product was observed in the tank pit during tank removal. The tank pit was reportedly over-excavated to remove residual contamination. However, a report on the over-excavation, waste oil tank removal and associated sampling activities was never prepared or issued (ERG, September 2001). ERG (September 2001) concluded that Wells MW-1, MW-2 and MW-3 were probably destroyed during the over-excavation performed between March and August 1999.

On April 30, 2001, ERG completed seven (7) Geoprobe™ borings to between four (4) and sixteen (16) feet bgs and collected grab groundwater samples for laboratory analyses. Pursuant to the request by the SF Bay RWQCB, borings were attempted at the location of the former waste oil UST. However, the borings encountered coarse fill rock and were unable to penetrate beneath the fill and did not encounter groundwater. No samples were recovered from the former waste oil UST location (ERG, September 2001).

ERG successfully completed Boring HP-1 approximately twenty (20) feet west and downgradient of the former waste oil UST. The groundwater sample from Boring HP-1 was analyzed for TPHg with BTEX distinction via EPA Methods 8015M/8020; TPHd via EPA Method 8015M; and fuel oxygenates via EPA Method 8260M. The fuel oxygenates in addition to MTBE were tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl

ether (ETBE) and tert-amyl methyl ether (TAME). Sample HP-1 was also analyzed for volatile organic compounds (VOCs) via EPA Method 8260; TPHmo via EPA Method 8015M; semi-volatile organic compounds (SVOCs) via EPA Method 8270; and five (5) heavy metals in the LUFT list via EPA Method 6010. The five LUFT metals are cadmium, chromium, lead, nickel and zinc (ERG, September 2001).

The grab groundwater samples from the other Geoprobe™ borings (HP-2 to HP-7) were analyzed for TPHg with BTEX distinction by EPA Methods 8015M/8020, TPHd via EPA Method 8015M and fuel oxygenates via EPA Method 8260M (ERG, September 2001).

The analytical results of the grab groundwater samples are presented in the attached Table 4. Maximum hydrocarbon concentrations were reported in Borings HP-3 and HP-7. Analytical results indicated 2,100 μg/L TPHg, 5.69 μg/L total BTEX, 2,100 μg/L MTBE and 130 μg/L TAME in Boring HP-3 at the southeast end of the *subject site*. Analytical results indicated 1,300 μg/L TPHg, 1,200 μg/L TPHd, and 1,300 μg/L MTBE in Boring HP-7 in the central area. The groundwater analytical results indicated TPHg was primarily if not exclusively due to MTBE in the samples (ERG, September 2001).

3.6 Groundwater Monitoring and Sampling (October 2000 to September 2004)

In October 2000, ERG resumed groundwater monitoring and sampling at the *subject site*. Groundwater sampling events took place on October 4, 2000; March 30, 2001; June 28, 2001; December 11, 2001; March 28, 2002; June 26, 2002; and November 19, 2002. The groundwater samples were analyzed for TPHd and TPHmo via EPA Method 8015M, TPHg with BTEX distinction via EPA Method 8015M/8020, and fuel oxygenates via EPA Method 8260B. A plume of hydrocarbon-impacted groundwater was outlined below the *subject site*, extending west to southwest towards the tidal creek (ERG, September 2001, February 2003).

In a letter dated December 12, 2001, the SF Bay RWQCB requested further investigation and a technical report, and recommended the installation of three (3) groundwater monitoring wells to further evaluate the groundwater plume. On behalf of Alfa Investments, ERG prepared a work plan in April 2002 to address the RWQCB requirements. The work plan (*"Work Plan to Investigate Ground Water at Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California"*) was implemented by ERG in November 2002.

The results of the November 2002 investigation by ERG were presented in a report dated February 2003, *"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."* Three (3) groundwater monitoring wells, designated MW-1R, MW-3R and MW-7R, were installed on November 11, 2002. The wells are located in Plate 2. The 2-inch diameter wells were set at approximately fifteen (15) feet bgs. According to the well logs (ERG, February 2003), Wells MW-1R and MW-7R were screened in the eight (8) to fifteen (15) feet depth interval, and Well MW-3R in the nine (9) to fifteen (15) feet depth interval. The top of the screened well casing was approximately four (4) to five (5) feet below the static groundwater surface. In contrast, the screened casing of past wells extends above or near the top of the static groundwater surface (Table 2A).

The newly installed Wells MW-1R, MW-3R and MW-7R were first sampled on November 19, 2002 along with the existing wells (MW-5, MW-6, MW-8 and MW-9). Analytical results indicated 1,300 µg/L TPHg, 560 µg/L TPHd, 1.48 µg/L total BTEX, 510 µg/L MTBE, 820 µg/L TBA and 16 µg/L TAME in Well MW-1R at Boring HP-7, downgradient of the former 8,000-gallon USTs. Analytical results were 370 µg/L TPHg, 150 µg/L MTBE, 220 µg/L TBA and 3.4 µg/L TAME in Well MW-3R near Boring HP-1 on the downgradient side of the *subject site* (Plate 2, Table 3).

Subsequent groundwater monitoring and sampling events took place on June 25, 2003; September 25, 2003; November 4, 2003; March 24, 2004; June 14, 2004 and September 24, 2004. The groundwater samples were analyzed for TPHd and TPHmo via EPA Method 8015M; TPHg with BTEX distinction via EPA Method 8015M/8020 and fuel oxygenates via EPA Method 8260B. The depth-to-water data are summarized in the attached Table 2B. The groundwater potentiometric surface pattern as inferred from depth-to-water and well elevation data indicate a trough centered on the *subject site*, the trough axis dipping generally west towards the tidal creek with an average gradient of approximately 0.02 feet/foot. The plume of hydrocarbon-impacted groundwater below the *subject site* was estimated to extend less than approximately fifty (50) feet off-site to the west (ERG, September 2003, December 2003; March 2004; October 2004; January 2005; and July 2005).

4.0 GEOLOGICAL SETTING

Mill Valley is located in the Coast Ranges geological and geomorphological province (Norris and Web, 1976). The *subject site* is underlain by estuarine deposits that consist primarily of water-bearing, organic, gray to olive gray sandy to silty clay with lenses or stingers of sandy silt and silty fine-sand, an assemblage typical of bay mud (Helley and LaJoie, 1979). These sediment deposits are underlain by bedrock comprised of marine siltstone and sandstone of the Merced Formation (Clark et al, 1991; Norris and Webb, 1976). Depth to bedrock at the *subject site* has not been established.

The static groundwater level below the *subject site* generally ranges between approximately two (2) and five (5) feet bgs (Tables 2A and 2B). The shallow or first groundwater is characterized by naturally-occurring high salinity and total dissolved solids, and elevated electrical conductivity (SES, September 28, 1990; May 26, 1993; and ERG, July 2005). According to the Basin Plan (SF Bay RWQCB, June 1995; December 12, 2001; June 10, 2003), these water quality criteria render the groundwater occurrence as not suitable as a source of potable or drinking water.

5.0 DISTRIBUTION AND EXTENT OF IMPACTED SOIL AND GROUNDWATER

The following summary of existing conditions at the *subject site* and in the adjoining drainage ditch and tidal creek is based on investigations completed to date as referenced.

5.1 Subsurface Soil Contamination

Historically, the highest reported concentrations of hydrocarbons in soil samples have been 6,100 mg/kg TPHg, 19,000 mg/kg TPHd, 317 mg/kg total BTEX and 40 mg/kg MTBE in soil samples collected in March and April 1999 from the USTs excavations (Attachment B). Free product was reported in the tank pits. Source removal, excavation of approximately 1,240 tons of hydrocarbon-impacted soil, and pumping of approximately 22,600 gallons of groundwater were completed in 1999 (EGS, June 14, 1999; SF RWQCB, May 26, 1999).

The source removal, excavation and dewatering performed in 1999 removed the bulk of the hydrocarbon mass from the *subject site*. Residual impacted soil on-site appears limited to within approximately ten (10) feet depth and mainly around the former USTs area. Based on soil samples from borings drilled around the former USTs, the maximum residual hydrocarbon concentrations range up to 92 mg/kg TPHg, 160 mg/kg TPHd, 1,100 mg/kg TPHmo and 2.04 mg/kg total BTEX (Table 1, Plate 3). Lead analytical data range from less than 0.2 to 27 mg/kg (Table 1, Plate 3), and are comparable to background as reported in the literature (Shacklette and Boerngen, 1984; Scott, 1995; and Bradford et al, 1996).

Sidewall soil samples taken in 1999 from the USTs excavations suggest localized residual concentrations of up to 510 mg/kg TPHg, 1,800 mg/kg TPHd, 11.2 mg/kg total BTEX and 9.2 mg/kg MTBE (Attachment B). Most if not all of these sidewall soil samples were collected in the saturated zone below the groundwater surface and likely reflect water-borne hydrocarbons. Groundwater hydrocarbon concentrations are represented by the post-excavation groundwater data from on-site Geoprobe™ borings and groundwater monitoring wells. Although the excavation sidewall samples were not analyzed for lead, a four (4) point composite (designated T1-T4) taken in 1999 from the excavated area was analyzed and contained 11 mg/kg (EGS, June 14, 1999).

As evident in the TPH, BTEX and MTBE concentration trends for the existing on-site Wells MW-1R, MW-3R, MW-5 and MW-7/7R (Table 3; EGS, July 2005), dissolved hydrocarbon concentrations have declined since 2000. This declining trend suggests the source removal, remedial excavation and dewatering performed in 1999 was effective at reducing residual hydrocarbons in the subsurface media at the *subject site*.

5.2 Groundwater Contamination

Historically, the highest concentrations of petroleum hydrocarbons in groundwater were reported from grab samples collected during the USTs removals in 1999. Free product was reported in the tank pits, and holes in the tanks and other evidence of past fuel leakage was

documented in the tank removal report by EGS (June 14, 1999). EGS reported up to 170,000 µg/L TPHg, 34,000 µg/L TPHd, 610 µg/L benzene, 2,100 µg/L toluene, 2,300 µg/L ethylbenzene, 6,000 µg/L total xylenes and 1,800 µg/L MTBE in grab water samples taken in 1999 from the tank pits. Significantly lower concentrations were evident in groundwater monitoring wells located around the periphery of the former USTs (Table 3), indicating that free product and hydrocarbon-impacted groundwater were concentrated in the USTs backfill.

Based on the historical groundwater monitoring data, the maximum hydrocarbon concentrations in groundwater after the 1999 remedial excavation have been at Wells MW-1R and MW-5 (Table 3). Since 2000-2002, hydrocarbon concentrations have ranged up to 1,800 µg/L TPHg, 1.0 µg/L total BTEX and 1,800 µg/L MTBE in Well MW-5; and 1,300 µg/L TPHg, 560 µg/L TPHd, 13 µg/L total BTEX and 880 µg/L MTBE in Well MW-1R. *Note:* MTBE accounts for most if not all of the TPHg quantifications. The effectiveness of source removal, soil excavation and dewatering on groundwater quality improvement is evident when recent groundwater data are compared with the 1999 tank pit groundwater data.

Furthermore, the groundwater monitoring data for 2000 to 2004 suggest the hydrocarbon plume is stable and hydrocarbon concentrations are on a decreasing trend (Table 3; ERG, July 2005). Based on the most recent sampling data for September 2004 (Plate 4 and Plate 5), the hydrocarbon plume appears to be confined largely to the *subject site*, defined by up-gradient Well MW-7R, peripheral Wells MW-6, MW-8 and MW-9, and downgradient Wells MW-3R and MW-5. The hydrocarbon plume will likely continue to decrease through natural attenuation, assuming new releases do not impact groundwater below the *subject site*.

In the past three (3) groundwater sampling events (March, June and September 2004), the concentrations of TPHg (mainly MTBE), TPHd, BTEX and MTBE have remained below environmental screening levels published by the SF Bay RWQCB (February 2005).

5.3 Residual Soil Contamination in the Drainage Ditch and Tidal Creek Area

An assessment of residual soil contamination in the drainage ditch and tidal creek area was presented by ERG in a report dated July 2005, "*Closure Report, Alfa Gas Station, 5 Ashford, Mill Valley, California."* The following investigation and remedial activities have been completed in the drainage ditch and tidal creek area to date:

- In September 1990, SES collected soil samples in small drainage channels on the north bank of the drainage ditch, and from the bottom of the drainage ditch at the base of these drainages. The analytical results identified up to 2,000 mg/kg TPHd, 9,000 mg/kg TPHmo, 140 mg/kg TPHg, 0.86 mg/kg total BTEX and 630 mg/kg lead in the soil samples (SES, September 28, 1990).

- In October 1990, remedial excavation was performed by SES in the drainage ditch. Approximately eighteen (18) inches of soil for a total of two (2) cubic yards was removed from the north bank where the small hand-dug drainage channels were located. Approximately eighteen (18) inches of soil for a total of 6.5 cubic yards was

removed along the bed of the drainage ditch from the culvert outfall downstream to the property perimeter near the intersection with the tidal creek (SES, November 1990; SF Bay RWQCB, May 26, 1998; March 1, 1999).

Following excavation, four (4) soil samples were collected from the drainage ditch bottom and bank, as documented in SES (November 1990). The samples were submitted for laboratory analyses. Analytical results indicated up to 1,000 mg/kg TPHmo, 180 mg/kg TPHd and 390 mg/kg lead in these confirmation soil samples. The 1990 soil sample locations and analytical data are presented in Attachment C. The excavated bank area was backfilled and no additional excavation was performed following the October 1990 confirmation sampling. According to SES (November 1990), the drainage ditch had steep cut slopes stabilized with concrete rip-rap, and further excavation would have disrupted and undermined bank stability.

- In April 2001, ERG drilled five (5) borings in the drainage ditch and tidal creek area and collected soil samples from approximately two (2) and four (4) feet depth at each boring location (ERG, September 2001). In November 2002, ERG collected surface soil samples within six (6) inches depth at nineteen (19) locations in the drainage ditch and tidal creek to complement the April 2001 sampling data (ERG, February 2003). Soil sampling locations and analytical data are summarized in Table 5. Surface sampling data are presented in Plate 6. The maximum concentrations of petroleum hydrocarbons and lead were reported in those soil samples collected above the box culvert of the drainage ditch. Surface soil samples above the drainage ditch culvert ranged from 190 to 580 mg/kg TPHmo and 120 to 1,200 mg/kg lead. No significant concentrations of gasoline constituents (TPHg, BTEX, oxygenates) were reported in the soil samples collected in the drainage ditch and tidal creek area (ERG, February 2003).

Although site-specific cleanup levels for the drainage ditch and tidal creek area have not been developed, Tier 1 screening was performed by ERG in July 2005 by comparing the soil sample data with watershed sediment screening criteria in SF Bay RWQCB (May 2000) and environmental screening levels (ESLs) in SF Bay RWQCB (February 2005). The main results of the comparison were as follows (ERG, July 2005):

<u>Lead in Tidal Creek</u>

Of the surface and subsurface soil samples collected along the bed of the tidal creek, none exceeded the watershed sediment screening criterion of 43.2 mg/kg for lead published by the SF Bay RWQCB (May 2000). The watershed sediment screening criterion is based on the San Francisco estuary wetland surface sediment ambient concentration. The concentration of lead ranged from 11 to 35 mg/kg for surface samples, and 5.1 to 41 mg/kg for subsurface samples (Table 5). These lead concentrations are comparable to background as represented by the upstream sampling location (13 mg/kg lead at Location C-8), and as reported in the

scientific literature (48 mg/kg maximum, Shacklette and Boerngen, 1984; Scott, 1995; and Bradford et al, 1996).

Surface soil samples collected from the banks of the tidal creek at Transect C-7 contained between 24 and 140 mg/kg lead (Table 5, Plate 6). The maximum lead concentration of 140 mg/kg was reported at Location C-7-E on the top of the creek's east bank and exceeded the SF Bay RWQCB (May 2000) sediment screening criterion of 43.2 mg/kg. However, the Sample C-7-E lead concentration was below the probable effects screening criterion of 218 mg/kg. The probable effects screening criterion corresponds to wetland foundation material not in direct contact with wetland flora and fauna; refer to SF Bay RWQCB, May 2000.

Sample lead concentrations are below the SF Bay RWQCB (February 2005) ESLs for residential (150 mg/kg) and commercial/industrial (750 mg/kg) land use (Table 5).

Lead in Drainage Ditch

The lead concentrations in surface soil samples taken along Transect C-3 across the drainage ditch, below the culvert ranged from 25 to 120 mg/kg (Table 5, Plate 6). Four (4) of the five (5) surface samples contained lead above the sediment screening criterion of 43.2 mg/kg, but none were above the SF Bay RWQCB (February 2005) residential or commercial/industrial ESLs. The analytical results of subsurface soil samples collected from two (2.0) to four (4.0) feet bgs indicate subsurface lead concentrations locally exceed the probable effects screening criterion of 218 mg/kg. The probable effect criterion applies to subsurface wetland materials where the burial depth is conservatively estimated at three (3) feet (SF Bay RWQCB, May 2000). None of the drainage ditch soil samples exceed the SF Bay RWQCB (February 2005) commercial/industrial ESL of 750 mg/kg for lead.

Transect C-6 was directly above the drainage ditch culvert and extended from the *subject site* to East Blithedale Avenue (Plate 6). The lead concentrations of surface samples taken along Transect C-6 ranged from 120 to 1,200 mg/kg - all except one were above the probable effects screening criterion of 218 mg/kg and above the residential ESL of 150 mg/kg. However, only one surface sample with 1,200 mg/kg lead exceeded the commercial/industrial ESL of 750 mg/kg (Table 5).

ERG (July 1995) argued that the elevated lead concentrations in surface soil above the drainage ditch culvert, and locally in the surface and subsurface soil in the drainage ditch, did not warrant remedial action because the majority of the soil samples met the commercial/industrial ESL; the most impacted area at Transect C-6 amounts to only approximately seven (7) percent of the *subject site* surface; the tidal creek downstream of the drainage ditch was not impaired; and storm runoff from city streets likely contributed to the impact in the drainage ditch.

Petroleum Hydrocarbons in Drainage Ditch and Tidal Creek

The petroleum hydrocarbon concentrations in soil samples taken from the drainage ditch and tidal creek area were compared with SF Bay RWQCB (February 2005) ESLs. The SF Bay RWQCB (May 2000) does not provide watershed sediment screening criteria for mixtures of petroleum hydrocarbon compounds (e.g. TPHg, TPHd or TPHmo).

Thirteen (13) of the seventeen (17) soil samples collected by ERG in April 2001 and November 2002 from the tidal creek bed and banks area contained detectable levels of petroleum hydrocarbons, including the surface sample taken from an upstream (background) location (Location C-8). Petroleum hydrocarbon concentrations in the tidal creek soil samples ranged up to 140 mg/kg TPHmo and 41 mg/kg TPHd, below the SF Bay RWQCB residential ESLs of 500 mg/kg and 100 mg/kg, respectively (Table 5).

With the exception of two samples (Sample C-3-2' with 130 mg/kg TPHd below the culvert and Sample C-6-A with 580 mg/kg TPHmo above the culvert), none of the soil samples collected by ERG in the drainage ditch area exceeded the SF Bay RWQCB residential ESLs. Furthermore, none of the samples exceed the commercial/industrial ESLs of 1,000 mg/kg for oil-range TPH and 500 mg/kg for diesel-range TPH (Table 5).

ERG (July 2005) concluded that remedial action was not warranted by the investigation results.

5.4 Comparison of On-Site Lead Concentrations With Drainage Ditch and Tidal Creek Area Lead Concentrations

The lead analytical data for soil samples below the *subject site*, as represented by the soil boring data is summarized in Table 1 and Plate 3. The on-site lead concentrations in subsurface soil samples ranged from less than 0.2 to 27 mg/kg, and were comparable to lead concentrations (3.3 to 17 mg/kg) in soil samples collected off-site (Table 1, Plate 3). These soil sample lead concentrations are similar to background as published in the scientific literature by Shacklette and Boerngen (1984), Scott (1995) and Bradford et al (1996).

Inasmuch as an on-site source for lead no longer exists, storm water runoff is considered to have contributed to the anomalous lead concentrations in the drainage ditch area. The drainage ditch and tidal creek receive storm water runoff via surface flow and storm conveyance inlets and piping from an area that encompasses the *subject site*, Ashford Avenue, Blithedale Avenue and vicinity. ERG (July 2005) concluded that potential sources for the lead in surface and subsurface soil in the drainage ditch and tidal creek include leaded gasoline formerly dispensed at the service station and used by vehicles circulating in city streets, and lead-bearing particulates from wheel weight dust, lead-based paint, and lead-bearing constituents in dirt, soil and sediments in the drainage area.

6.0 REGULATORY STATUS ASSESSMENT

The site appears to meet the SF Region RWQCB criteria for a low-risk fuel site. As per the SF Bay RWQCB (January 5, 1996) and LLNL (1998), a low-risk groundwater case has the following general characteristics:

- The leak has stopped and on-going sources, including free product, have been removed or remediated;
- The site has been adequately characterized
- The dissolved-hydrocarbon plume is stable and not migrating;
- No water wells, deeper drinking water aquifers, surface water or other sensitive receptors are likely to be impacted;
- The site represents no significant risk to human health or the environment;

The low-risk criteria, as they relate to the *subject site*, are discussed below:

The leak has stopped and on-going sources, including free product, have been removed

The fuel hydrocarbons reported in soil and groundwater below the *subject site* are the result of leaks from the former USTs systems, as documented in EGS (June 14, 1999) and ERG (December 2001), among other technical reports. The tanks and amenities, the source of the subsurface hydrocarbons, were removed in 1999. The over-excavation and dewatering that followed the tank removals removed free product and significantly reduced the hydrocarbon mass present in soil and groundwater below the *subject site*. The concentration trends for Wells MW-1R, MW-3R, MW-5 and MW-7/7R (Table 3) show dissolved hydrocarbon concentrations have declined since historical highs in 1999, and suggest a significant residual source likely to reverse current water quality trends is not present. Free product has not been observed in the groundwater monitoring wells.

The site has been adequately characterized

Historical soil analytical data suggest that residual hydrocarbons persist in the non-excavated areas around the former USTs. Hydrocarbon concentrations in soil samples collected around the periphery of the removed sources appear to be related to residual dissolved hydrocarbons in the groundwater or saturated zone. The soil sample data suggest the vertical extent of residual impact to soil is less than ten (10) feet bgs. Since 1999, declining hydrocarbon concentrations in groundwater samples from wells located near and downgradient of the former USTs suggest that any remaining soil impact is not a significant source capable of reversing current water quality trends (ERG, July 2005).

The dissolved hydrocarbon plume is stable and not migrating

Groundwater monitoring data and the decreasing trend in dissolved hydrocarbon concentrations indicate that the hydrocarbon plume is stable and shrinking due to natural attenuation processes. Although there are fluctuations to hydrocarbon concentrations due to seasonal changes in groundwater elevation, the hydrocarbon concentrations overall are following declining trends and are expected to continue as a result of natural attenuation processes (Table 3; ERG, July 2005).

No water wells, deeper drinking water aquifers, surface water or other sensitive receptors are likely to be impacted

In 1990 a well survey was completed by SES and included a review of the State's Department of Water Resources well records and other agency records. The well survey identified four (4) wells within one-half mile radius of the *subject site* (SES, September 28, 1990). Three (3) of the wells were irrigation water supply wells located, respectively, at 100 Coleridge Road, 54 Shell Road and 120 Alta Vista in Mill Valley. The fourth well was a domestic/irrigation well at 23 Mesa Avenue in Mill Valley. Based on the limited plume migration and the inferred west flow direction, none of the wells identified are located downgradient of or near the *subject site* (SES, September 28, 1990). Due to the distance and location, these wells are unlikely to be impacted by the near-surface hydrocarbon plume identified below the *subject site*. The hydrocarbon plume is of limited extent, has not migrated far upgradient or downgradient of the *subject site*, and no natural or manmade conduits to deeper aquifers have been identified in the affected area. Mill Valley and the *subject site* are supplied potable water by the municipal water system.

The site presents a low risk to human health or the environment

The site is currently occupied by a retail service station and is likely to continue for commercial/industrial use into the future. Although a site-specific risk assessment has not been completed, residual hydrocarbons and lead concentrations in groundwater below the *subject site* are below SF Bay RWQCB (February 2005) ESLs. Over ninety-three (93) percent of the *subject site* is paved and only approximately seven (7) percent is unpaved, mainly above the drainage ditch culvert fronting East Blithedale Avenue. Given the surface cover and the nature and amounts of contaminants, the risk from potential inhalation of and physical contact with residual subsurface contaminants is not significant. There is no indication of an adverse impact to the tidal creek located downgradient of the *subject site*.

The residual amounts of petroleum hydrocarbons and lead in soil and groundwater below the *subject site* do not pose an adverse human health and environmental impact under the current conditions and service station use of the property.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Past investigations have demonstrated relatively minor and localized amounts of hydrocarbons and lead remain in the subsurface soil and groundwater below the 5 Ashford Avenue Site. These residual contaminants are not considered to pose a threat to reversing water quality trends. Groundwater monitoring trends indicate the hydrocarbon plume is stable and decreasing in size and mass by natural attenuation processes. Residual amounts of hydrocarbons in soil and groundwater below the *subject site* do not pose an adverse human health and environmental impact under the current conditions and/or service station use. The low risk associated with residual hydrocarbons in soil and groundwater can best be addressed via institutional controls such as site use restrictions, a soil and groundwater management plan, and notification requirements for future utility trenching or excavation activities.

Pursuant to the SF RWQCB letter dated April 11, 2005, ERG recommends uploading the electronic data for the *subject site* to the State Water Resources Control Board's web-based Geotracker database.

The *subject site* meets the agency criteria for a low-risk groundwater case. On behalf of Alfa Investments, ERG requests the SF Bay RWQCB consider no further remedial action under the current and intended use of the *subject site*.

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SIGNATURE PAGE

The geological information, conclusions, and recommendations contained in this report were prepared under the direction of a California Professional Geologist and Certified Engineering Geologist.

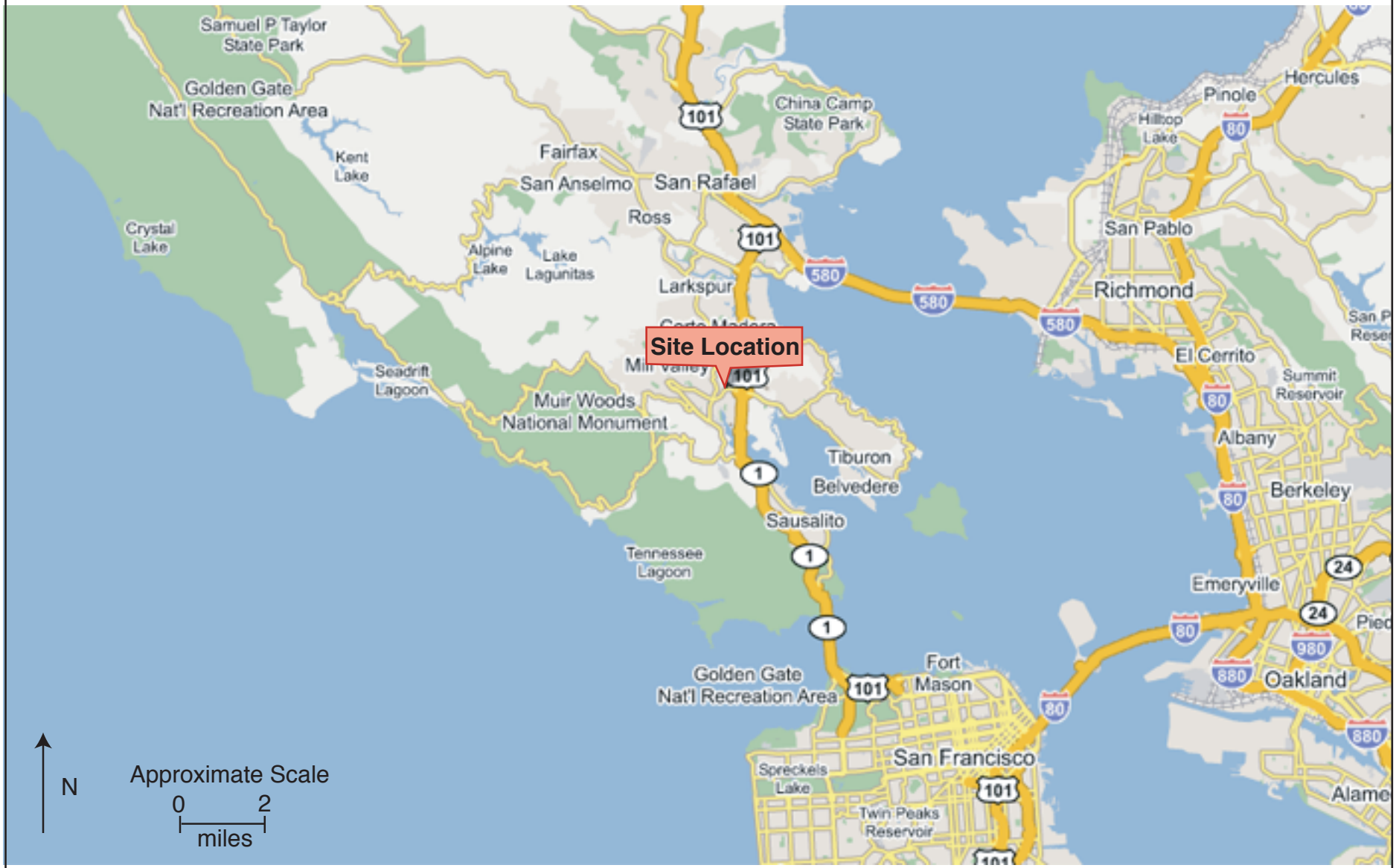
November 15, 2005

Paul Studemeister
Project Geologist

Date

California Certified Engineering Geologist (1746)
California Professional Geologist (4635)

PLATES



Map from Google

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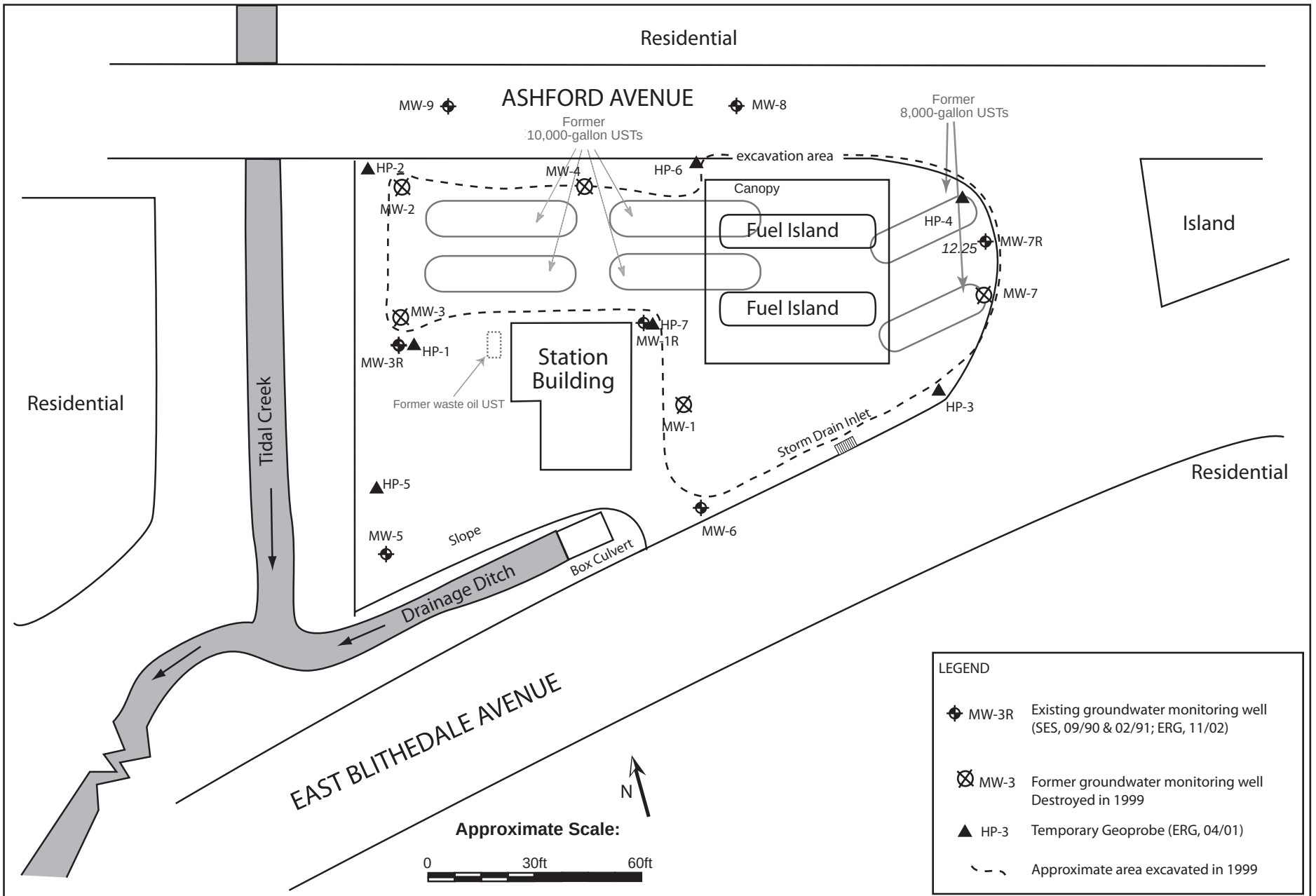
ALFA GAS STATION

5 Ashford Avenue, Mill Valley, California

November 17, 2005

Plate 1

Site Location



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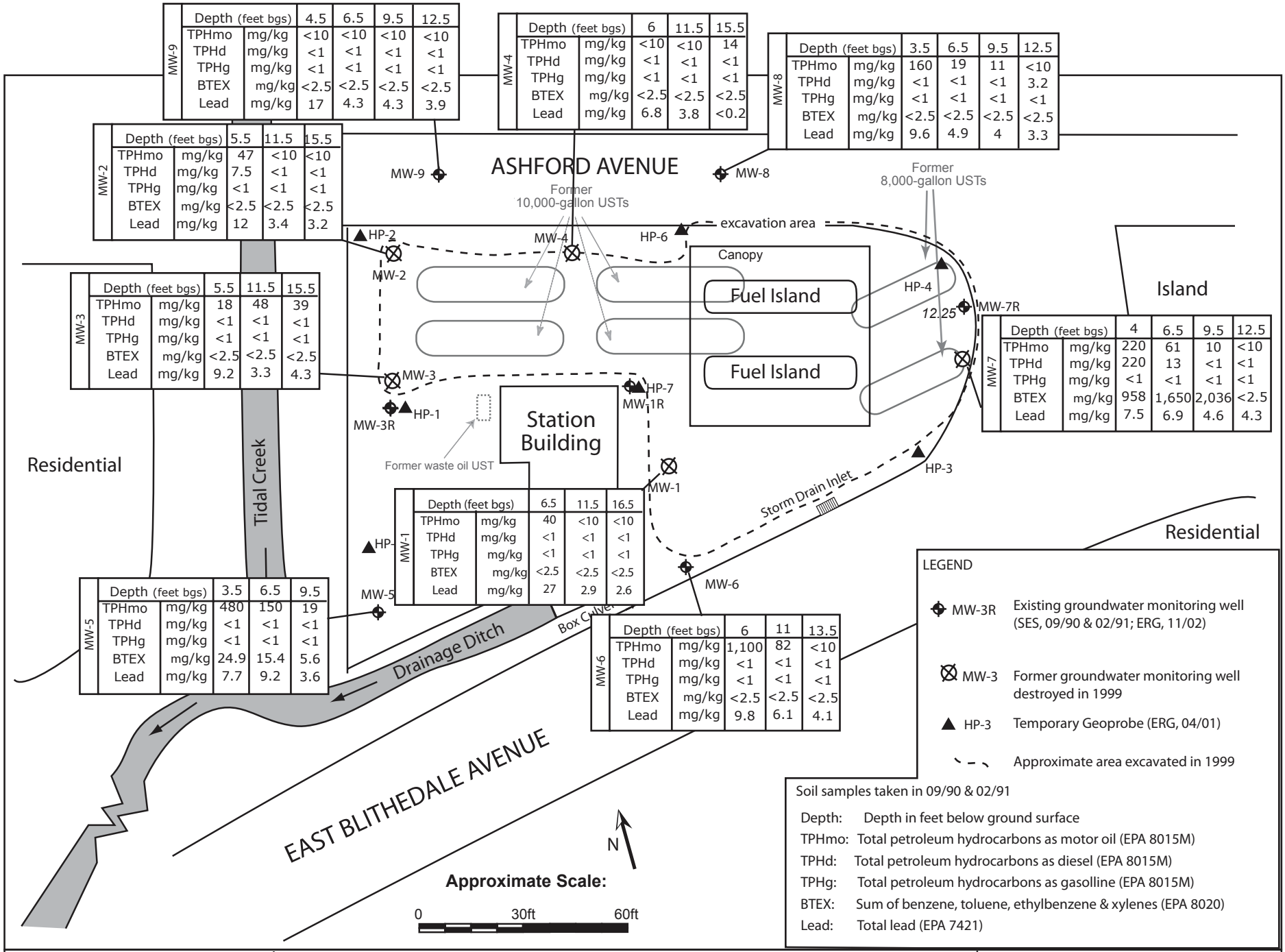
ALFA GAS STATION

5 Ashford Avenue, Mill Valley, California

November 17, 2005

Plate 2

Site Plan



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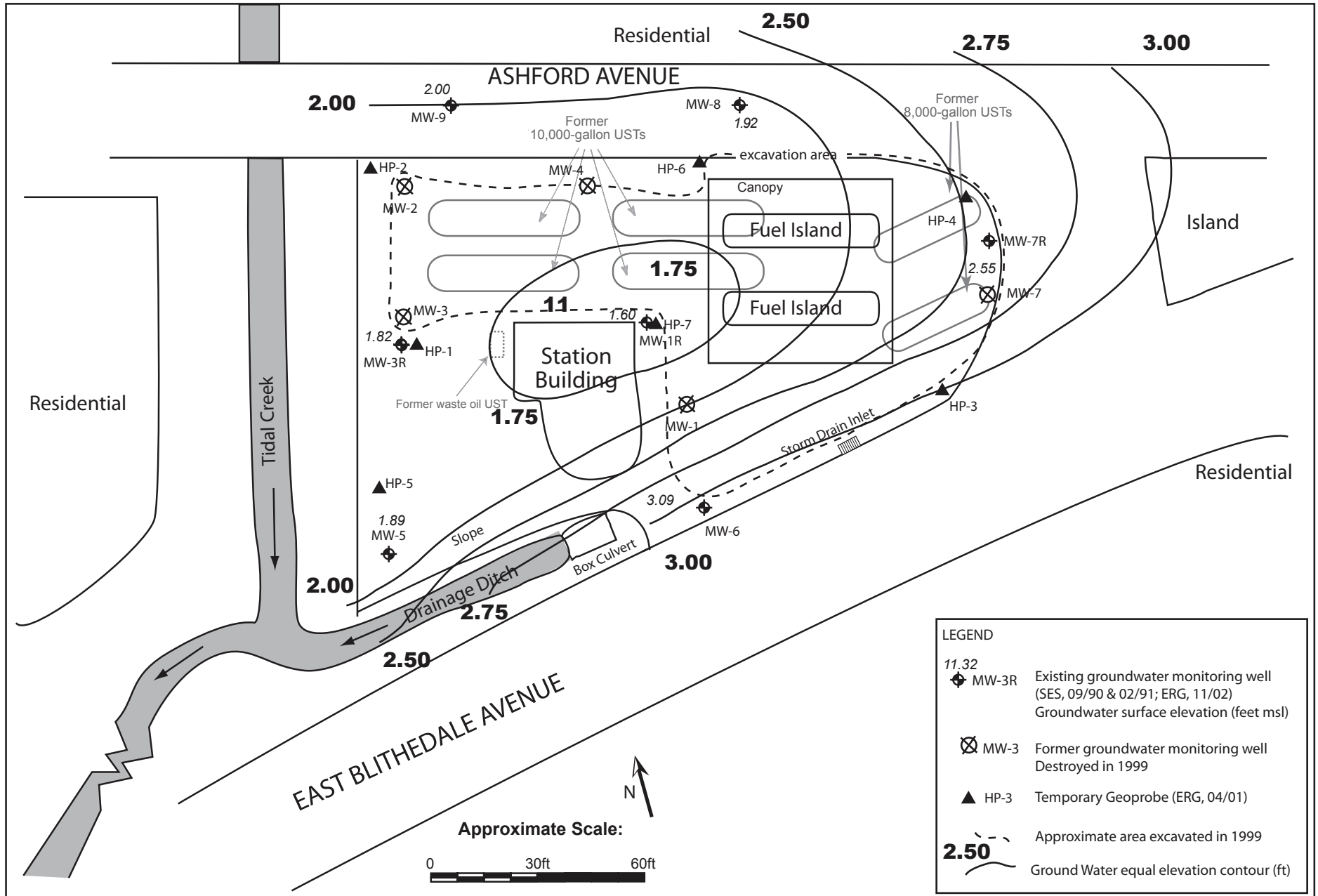
5 Ashford Avenue, Mill Valley, California

November 17, 2005

Plate 3

Soil Analytical Results



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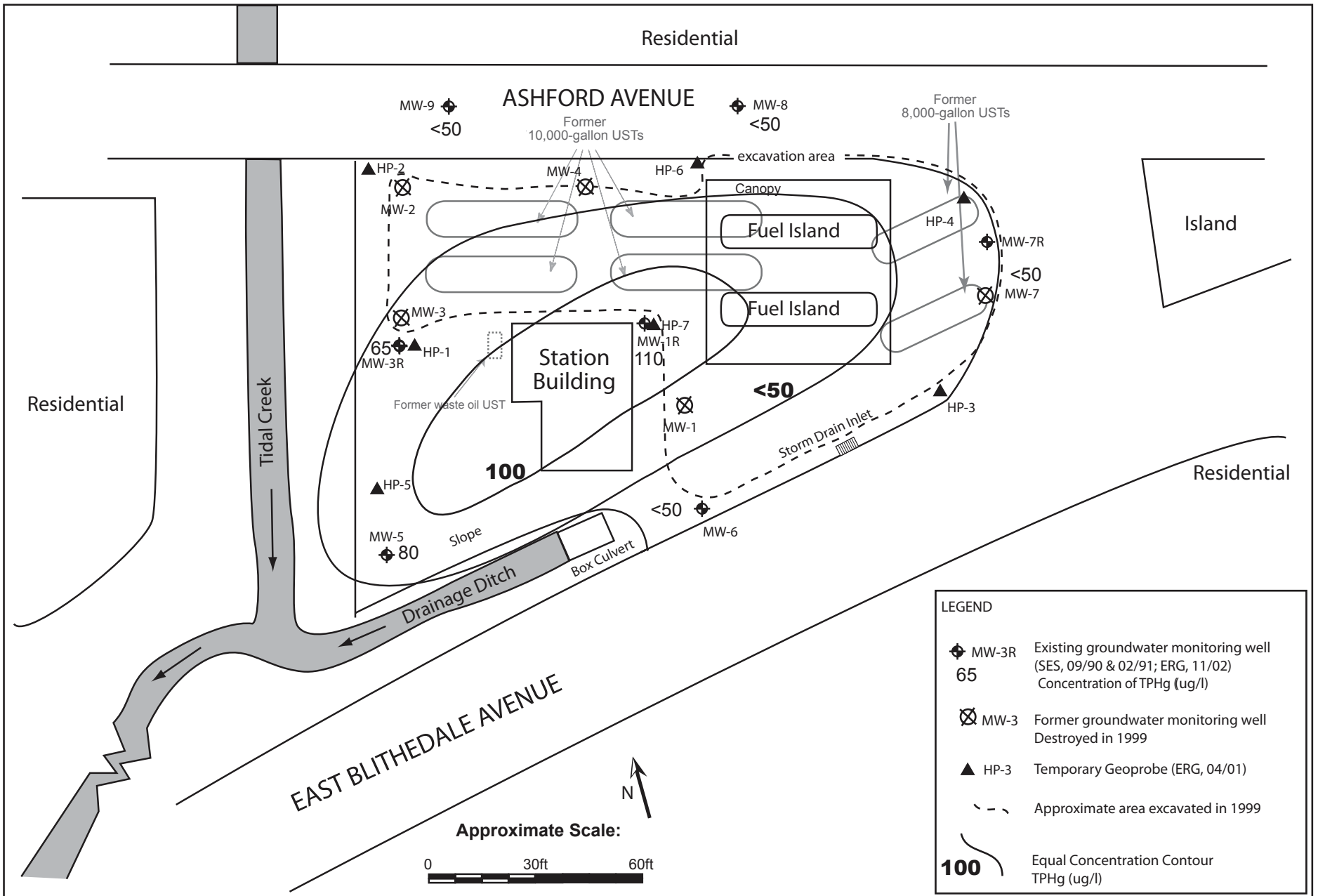
5 Ashford Avenue, Mill Valley, California

November 17, 2005

Plate 4

Groundwater Potentiometric Surface Map for September 24, 2004



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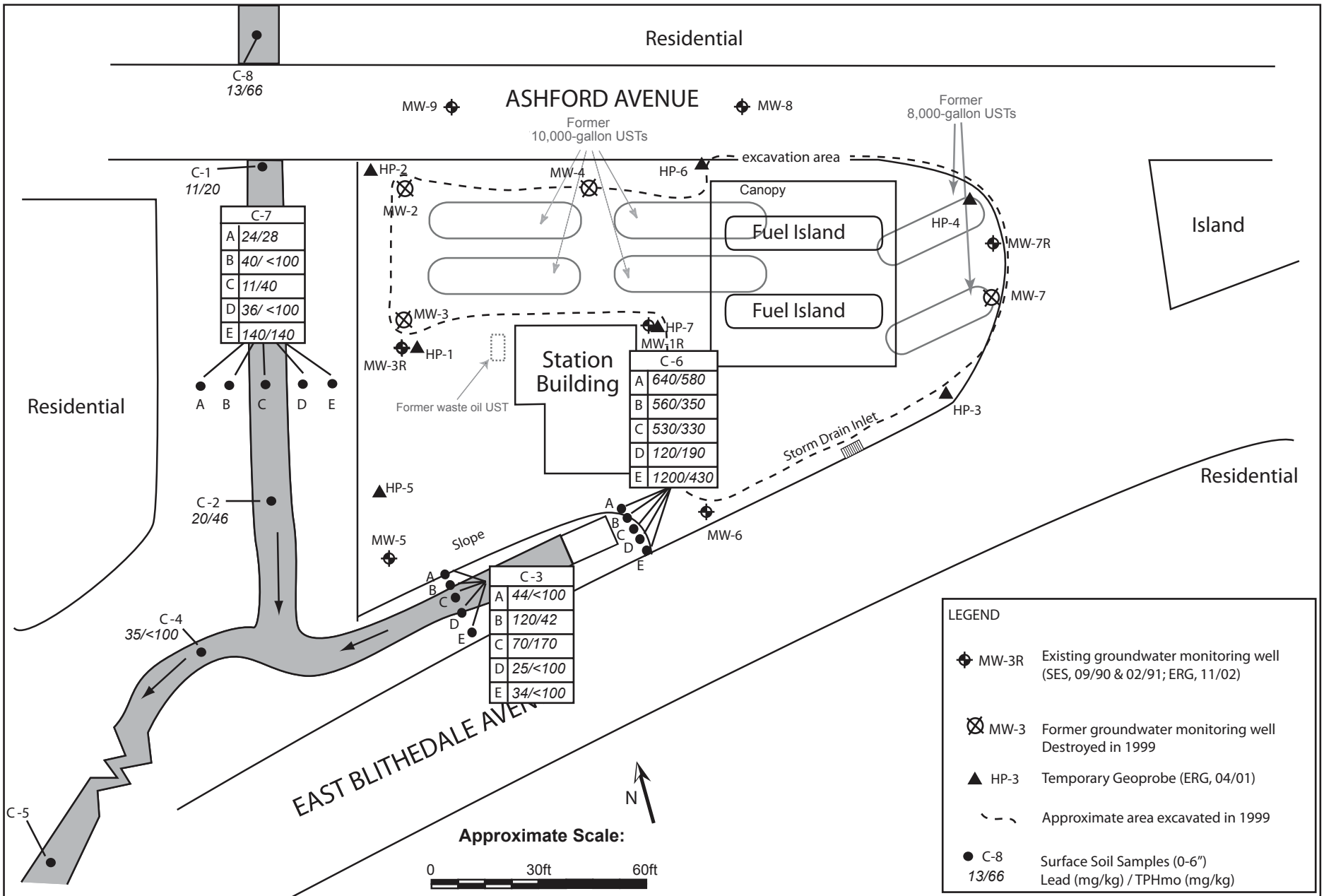
5 Ashford Avenue, Mill Valley, California

November 17, 2005

Plate 5

Distribution of Total Petroleum Hydrocarbons in Groundwater for September 24, 2004



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5 Ashford Avenue, Mill Valley, California

November 17, 2005

Plate 6

Distribution of Lead and Total Petroleum Hydrocarbons as Motor Oil in Surface Soil

TABLES

Table 1.
Past Soil Analytical Results from Borings
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Sample	Sample Location	Sample Date	Sample Depth	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Lead
			feet bgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW-1	Well MW-1 Boring	9/6/1990	6.5	<1.0	<1.0	**40**	<0.0025	<0.0025	<0.0025	<0.0025	**27.0**
			11.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**2.9**
			16.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**2.6**
MW-2	Well MW-2 Boring	9/7/1990	5.5	<1.0	**7.5**	**47**	<0.0025	**0.0048**	<0.0025	**0.0036**	**12.0**
			11.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**3.4**
			15.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**3.2**
MW-3	Well MW-4 Boring	9/7/1990	5.5	<1.0	<1.0	**18**	<0.0025	<0.0025	<0.0025	<0.0025	**9.2**
			11.5	<1.0	<1.0	**48**	<0.0025	<0.0025	<0.0025	<0.0025	**3.3**
			15.5	<1.0	<1.0	**39**	<0.0025	<0.0025	<0.0025	<0.0025	**4.3**
MW-4	Well MW-4 Boring	9/7/1990	6	<1.0	<1.0	<10	**0.025**	<0.0025	<0.0025	<0.0025	**6.8**
			11.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**3.8**
			15.5	<1.0	<1.0	**14**	<0.0025	<0.0025	<0.0025	<0.0025	<0.2
MW-5	Well MW-5 Boring	2/4/1991	3.5	<1.0	<1.0	**480**	<0.0025	**0.0025**	**0.0044**	**0.018**	**7.7**
			6.5	<1.0	<1.0	**150**	<0.0025	<0.0025	**0.0041**	**0.015**	**9.2**
			9.5	<1.0	<1.0	**19**	<0.0025	**0.0028**	<0.0025	**0.0028**	**3.6**
MW-6	Well MW-6 Boring	2/7/1991	6.0	<1.0	<1.0	**1,100**	<0.0025	<0.0025	<0.0025	**0.0062**	**9.8**
			11.0	<1.0	<1.0	**82**	<0.0025	<0.0025	<0.0025	**0.0062**	**6.1**
			13.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**4.1**
MW-7	Well MW-7 Boring	2/4/1991	4.5	**92**	**160**	**220**	**0.078**	**0.035**	**0.28**	**0.25**	**7.5**
			6.5	**10**	**13**	**61**	**0.55**	**0.04**	**0.69**	**0.37**	**6.9**
			9.5	**11**	<1.0	<10	**0.80**	**0.036**	**1.0**	**0.20**	**4.6**
			12.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**4.3**
MW-8	Well MW-8 Boring	2/5/1991	3.5	<1.0	<1.0	**160**	<0.0025	<0.0025	<0.0025	<0.0025	**9.6**
			6.5	<1.0	<1.0	**19**	<0.0025	<0.0025	<0.0025	<0.0025	**4.9**
			9.5	<1.0	<1.0	**11**	<0.0025	<0.0025	<0.0025	<0.0025	**4.0**
			12.5	<1.0	**3.2**	<10	<0.0025	<0.0025	<0.0025	<0.0025	**3.3**
MW-9	Well MW-9 Boring	2/5/1991	4.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**17**
			6.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**4.3**
			9.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**4.3**
			12.5	<1.0	<1.0	<10	<0.0025	<0.0025	<0.0025	<0.0025	**3.9**
Environmental Screening Levels (SF Bay RWQCB, February 2005)											
Shallow Soil, Residential (Table B-1)				100	100	500	0.18	9.3	32	11	150
Shallow Soil, Commercial/Industrial (Table B-2)				400	500	1,000	0.38	9.3	32	11	750

Table 1.
Past Soil Analytical Results from Borings
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Notes:

General

mg/kg	Milligram per kilogram (parts per million equivalent)
<1.0	Not detected at or above laboratory detection limit
feet bgs	Sample depth in feet below ground surface
NE	Not established
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
Lead	Total lead by EPA Method 7421

Environmental screening levels (ESLs) published by SF Bay Region, Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* incorporating ESL updates and corrections. Table B-1 ESLs correspond to shallow soil, residential land use and Table B-2 to shallow soil, commercial/industrial land use, both where groundwater IS NOT a current or potential drinking water resource. Following SF Bay RWQCB protocol, soil ESLs apply to the vadose zone.

TPHd: ESL for TPH (middle distillates)

TPHmo: ESL for TPH (residual fuels)

TPHg: ESL for TPH (gasoline)

Source

1990 Samples:	Sierra Environmental Services (SES, September 28, 1990): *"Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California"*
1991 Samples:	SES (April 3, 1991): *"Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford Avenue, Mill Valley, California"*

Table 2A
1990 to 1998 Depth-to-Water Data for Groundwater Monitoring Wells, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Well:	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9	
TOC :	5.89		5.37		5.77		5.11		5.44		6.66		5.91		6.11		5.88	
Screened Interval:	2.5 to 14 feet		2.5 to 14 feet		2.5 to 14 feet		5 to 14.5 feet		3.5 to 13.5 feet		3.5 to 13.5 feet		3.5 to 13.5 feet		3.5 to 13.5 feet		4 to 12 feet	
Date	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE
09/12/90	4.92	0.97	4.07	1.30	4.35	1.42	3.11	2.00	--	--	--	--	--	--	--	--	--	--
12/13/90	4.47	1.42	3.23	2.14	3.51	2.26	3.21	1.90	--	--	--	--	--	--	--	--	--	--
02/11/91	--	--	--	--	--	--	--	--	3.84	1.60	12.08	-5.42	3.25	2.66	4.32	1.79	3.99	1.89
02/20/91	4.25	1.64	4.22	1.15	4.46	1.31	3.05	2.06	4.13	1.31	8.42	-1.76	3.39	2.52	4.93	1.18	5.00	0.88
06/12/91	4.01	1.88	--	--	3.61	2.16	--	--	3.92	1.52	4.29	2.37	3.11	2.80	3.80	2.31	4.25	1.63
09/12/91	4.77	1.12	--	--	4.28	1.49	--	--	4.14	1.30	4.35	2.31	3.49	2.42	4.47	1.64	4.90	0.98
08/25/92	4.76	1.13	3.63	1.74	3.81	1.96	4.63	0.48	3.76	1.68	4.19	2.47	3.42	2.49	4.32	1.79	4.25	1.63
04/27/93	3.29	2.60	4.02	1.35	3.42	2.35	2.72	2.39	3.75	1.69	4.17	2.49	3.54	2.37	4.10	2.01	4.03	1.85
02/27/98	3.17	2.72	2.87	2.50	2.75	3.02	2.81	2.30	3.09	2.35	3.54	3.12	2.21	3.70	2.99	3.12	3.27	2.61
06/23/98	3.04	2.85	3.02	2.35	3.06	2.71	2.06	3.05	3.14	2.30	4.02	2.64	3.21	2.70	3.48	2.63	3.53	2.35

Notes:

DTW: Depth to water in feet below top of well casing.

GE: Groundwater elevation = top of well casing elevation minus depth-to-water.

TOC: Surveyed elevation of top of casing in feet relative to bench mark/datrum, taken from SES (April 3, 1991)

Screened Interval: Screened interval in feet below ground surface

Source

9/12/90: Sierra Environmental Services (SES, September 28, 1990): "*Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

12/13/90: SES (January 7, 1991): "*Redwood Oil Service Station, 5 Ashford, Mill Valley, California.* "

2/1991: SES (April 3, 1991): "*Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford, Mill Valley, California.* "

6/12/91: SES (July 10, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

9/12/91: SES (October 7, 1991): "*Redwood Oil Service Station, 5 Ashford, Mill Valley, California.* "

1992-1993: SES (May 26, 1993): "*5 Ashford, Mill Valley, California.* "

2/27/98: EnviroNet Consulting (EnviroNet, April 1, 1998): "*Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California.* "

6/23/98: EnviroNet (August 24, 1998): "*Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California.* "

Table 2B
2000 to 2004 Depth-to-Water Data for Groundwater Monitoring Wells, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Well:	MW-1R		MW-3R		MW-5		MW-6		MW-7R		MW-8		MW-9	
TOC :	5.95		5.74		5.44		6.89		6.00		6.32		6.10	
Screened Interval:	8 to 15 feet		9 to 15 feet		3.5 to 13.5 feet		3.5 to 13.5 feet		8 to 15 feet		3.5 to 13.5 feet		4 to 12 feet	
Date	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE
10/04/00	--	--	--	--	3.73	1.71	4.34	2.55	--	--	4.28	2.04	4.27	1.83
03/30/01	--	--	--	--	3.71	1.73	4.22	2.67	--	--	4.49	1.83	4.09	2.01
06/28/01	--	--	--	--	3.57	1.87	4.10	2.79	--	--	4.26	2.06	4.22	1.88
12/11/01	--	--	--	--	3.61	1.83	3.96	2.93	--	--	3.81	2.51	3.19	2.91
03/28/02	--	--	--	--	3.59	1.85	4.15	2.74	--	--	4.21	2.11	3.63	2.47
06/26/02	--	--	--	--	3.51	1.93	3.80	3.09	--	--	4.00	2.32	3.94	2.16
11/19/02	4.13	1.82	3.61	2.13	3.23	2.21	3.96	2.93	11.21	-5.21	4.15	2.17	3.21	2.89
06/25/03	4.38	1.57	3.95	1.79	3.71	1.73	3.85	3.04	3.18	2.82	4.89	1.43	4.47	1.63
09/25/03	4.30	1.65	4.91	0.83	4.67	0.77	3.90	2.99	3.61	2.39	4.38	1.94	4.00	2.1
11/04/03	4.34	1.61	3.84	1.90	3.42	2.02	5.04	1.85	4.83	1.17	4.16	2.16	3.78	2.32
03/24/04	4.25	1.70	3.75	1.99	3.55	1.89	3.50	3.39	3.32	2.68	4.10	2.22	3.75	2.35
06/14/04	4.35	1.60	3.90	1.84	3.70	1.74	3.60	3.29	3.10	2.90	4.35	1.97	4.10	2.00
09/24/04	4.35	1.60	3.92	1.82	3.55	1.89	3.80	3.09	3.45	2.55	4.40	1.92	4.10	2.00

Notes:

DTW: Depth to water in feet below top of well casing.

GE: Groundwater elevation = top of well casing elevation minus depth-to-water.

TOC: Surveyed elevation of top of casing in feet by Luk & Associates, December 2003 (ERG, January 2005)

Screen Interval: Screened interval in feet below ground surface

Source

10/4/00: Environmental Resource Group, Inc. (ERG, December 8, 2000): "*Ground Water Monitoring Report for October 2000, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

3 & 6/01: ERG (September 2001): "*Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

12/11/01: ERG (February 2002): "*Ground Water Monitoring, 4th Quarter 2001, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

2002: ERG (February 2003): "*Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

6/25/03: ERG (September 2003): "*Ground Water Monitoring, 2nd Quarter 2003* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

9/25/03: ERG (December 2003): "*Ground Water Monitoring, 3rd Quarter 2003* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

11/4/03: ERG (March 2004): "*Ground Water Monitoring, 4th Quarter 2003* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

3/24/04: ERG (May 2004): "*Ground Water Monitoring, 1st Quarter 2004* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

6/14/04: ERG (October 2004): "*Ground Water Monitoring, 2nd Quarter 2004* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

9/24/04: ERG (January 2005): "*Ground Water Monitoring, 3rd Quarter 2004* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

Table 3
Past Groundwater Analytical Results for Groundwater Monitoring Wells,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	9/12/90 [1]	<50	**410**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	12/13/90 [2]	**520**	**230**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	<50	**190**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	**110**	<500	**0.6**	<0.5	<0.5	**0.6**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	**1.2**	**1.3**	<0.5	**1.8**	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**1,300** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	**36**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**2,410** [5]	**2,370** [4]	<0.5	<0.5	<0.5	<0.5	**6.92**	--	--	--	--	<5.0
MW-1R	11/19/02	**1,300**	**560**	<200	**0.81**	<0.5	**0.67**	<1.5	**510**	**820**	<10	<10	**16**	--
	06/25/03	**910** [10]	**160**	<200	**12**	**0.71**	<0.5	<1.5	**880**	<250	<10	<10	**28**	--
	09/25/03	**280**	**64**	<200	**6.8**	<0.5	<0.5	<1.5	**400**	<250	<10	<10	<10	--
	11/04/03	**460** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**450**	<250	<10	<10	**12**	--
	03/24/04	**360** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**350**	<250	<10	<10	**7.7**	--
	06/14/04	**620** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**420**	**190**	<5.0	<5.0	**12**	--
	09/24/04	**110** [10]	<50	--	**1.1**	<0.5	<0.5	<1.5	**110**	--	--	--	--	--
MW-2	9/12/90 [1]	**90**	**320**	<500	<0.5	<0.5	<0.5	**0.55**	--	--	--	--	--	--
	12/30/90	**130**	**340**	<500	**4.4**	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	**70**	**280**	<500	**3.0**	**0.5**	<0.5	**1.0**	--	--	--	--	--	--
	06/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--
	04/27/93	<50	**2,100** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**610** [5]	<250	<2.5	<2.5	<2.5	<2.5	**230**	--	--	--	--	<5.0
	6/23/98 [3]	<250	**596** [5]	<250	<2.5	<2.5	<2.5	<2.5	**460**	--	--	--	--	<5.0
MW-3	9/12/90 [1]	<50	**230**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	12/30/90	<50	**210**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	**60**	**240**	<500	**1.5**	**0.9**	<0.5	**2.5**	--	--	--	--	--	--
	06/12/91	<50	**140**	<500	**1.2**	<0.5	<0.5	<0.5	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**33**	<250	<0.5	<0.5	<0.5	<0.5	**1.8**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**1,560**	<250	<0.5	<0.5	<0.5	<0.5	**5.23**	--	--	--	--	<5.0
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 3
Past Groundwater Analytical Results for Groundwater Monitoring Wells,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3R	11/19/02	**370**	<50	<200	<0.5	<0.5	<0.5	<1.5	**150**	**220**	<2.5	<2.5	**3.4**	--
	06/25/03	**160** [10]	<50	<200	**2.0**	<0.5	<0.5	<1.5	**160**	<50	<2.0	<2.0	**2.7**	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**35**	<50	<2.0	<2.0	<2.0	--
	11/04/03	**140** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**140**	<50	<2.0	<2.0	**2.4**	--
	03/24/04	**75** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**75**	<50	<2.0	<2.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<50	**40**	<2.0	<2.0	<2.0	--
	09/24/04	**65** [10]	<50	--	<0.5	<0.5	<0.5	<1.5	**65**	--	--	--	--	--
MW-4	9/12/90 [1]	**14,000**	**1,800**	<500	**2,200**	**660**	**200**	**870**	--	--	--	--	--	--
	12/30/1990	**540**	**730**	<500	**94**	**2.3**	<0.5	**3.3**	--	--	--	--	--	--
	03/13/91	**28,000**	**2,400**	<500	**900**	**100**	**1,800**	**4,200**	--	--	--	--	--	--
	06/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/25/92	**270**	**1,600**	--	**47**	**0.74**	**3**	**1.5**	--	--	--	--	--	--
	04/27/93	<50	**14,000** [7,8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	**27,000**	**560** [5]	<500	**840**	<5	**27**	<5	**23,000**	--	--	--	--	<5.0
	6/23/98 [3]	<500	**1,990** [5]	**4,560** [4]	**7.19**	<5	<5	<5	**991**	--	--	--	--	<5.0
MW-5	2/20/91 [1]	<50	**100**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	09/12/91	<50	<50	**800**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**780** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	**2,300**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**329** [5]	<263	<0.5	<0.5	<0.5	<0.5	**4,320** [9]	--	--	--	--	<5.0
	10/04/00	**800** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**790**	<1,000	<50	<50	<50	<100
	03/30/01	**1,800** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**1,800**	<500	<20	<20	<20	--
	06/28/01	**490** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**490**	<500	<20	<20	<20	--
	12/11/01	**800** [10]	<50	<200	**1.0**	<0.5	<0.5	<1.5	**500**	**310**	<5.0	<5.0	<5.0	--
	03/28/02	**1,200**	<50	<200	<0.5	<0.5	<0.5	<1.5	**360**	**810**	<1.0	<1.0	1.0	--
	06/26/02	**460** [10]	<50	<200	**0.52**	<0.5	<0.5	<1.5	**460**	<25	<1.0	<1.0	1.1	--
	11/19/02	**130**	<50	<200	<0.5	<0.5	<0.5	<1.5	**54**	**75**	<1.0	<1.0	<1.0	--
	06/25/03	**120** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**120**	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**65**	<25	<1.0	<1.0	<1.0	--
	11/04/03	**65** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**65**	<25	<1.0	<1.0	<1.0	--
	03/24/04	**58** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**58**	<25	<1.0	<1.0	<1.0	--
	06/14/04	**56** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**56**	<25	<1.0	<1.0	<1.0	--
	09/24/04	**80** [10]	<50	--	<0.5	<0.5	<0.5	<1.5	**80**	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 3
Past Groundwater Analytical Results for Groundwater Monitoring Wells,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-6	2/20/91 [1]	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	**110**	<500	**1.2**	**0.9**	**0.8**	**1.1**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	**0.7**	**0.9**	<0.5	**1.2**	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**130** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	**36**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**180** [5]	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**7.3**	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	**87**	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	**5.4**	--	--	--	--	--
MW-7	2/20/91 [1]	**390**	**1,100**	<500	**1.4**	**0.6**	**0.6**	**1.5**	--	--	--	--	--	--
	06/12/91	**8,200**	**1,400**	**5,400**	**2,300**	**35**	**720**	**150**	--	--	--	--	--	--
	09/12/91	**3,700**	**550**	<500	**300**	**17**	**210**	**67**	--	--	--	--	--	--
	08/25/92	**2,150**	<50	--	**1,770**	**16**	**92**	**34**	--	--	--	--	--	--
	04/27/93	**6,700**	**2,200** [7,8]	--	**3,300**	**16**	**250**	**68**	--	--	--	--	--	--
	2/27/98 [3]	**17,000**	**1,500** [5,6]	<250	**1,900**	**29**	**25**	**17**	**7,100**	--	--	--	--	<5.0
	6/23/98 [3]	**7,520**	**1,240** [5,6]	**264** [4]	**1,200**	**32.2**	**23.2**	**25.0**	**3,320**	--	--	--	--	<5.0
MW-7R	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**7.2**	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**3.2**	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	**0.63**	**0.70**	<0.5	<1.5	**21**	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	**0.51**	<0.5	<1.5	**9.9**	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**8.9**	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**3.4**	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	**15**	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 3
Past Groundwater Analytical Results for Groundwater Monitoring Wells,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	2/20/91 [1]	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	**60**	<500	**1.0**	**0.6**	**0.5**	**0.7**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**90** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**76** [5]	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	6/23/98 [3]	<50	**411** [5]	<263	<0.5	<0.5	<0.5	<0.5	**3.56**	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<1.0	--	--	--	--	--
MW-9	2/20/91 [1]	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<50	<500	**0.9**	**0.6**	<0.5	**0.7**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**80**	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	6/23/98 [3]	<50	**180**	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<1.0	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 3
Past Groundwater Analytical Results for Groundwater Monitoring Wells, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Notes:

General

µg/L	Micrograms per liter (parts per billion equivalent)
mg/L	Milligrams per liter (parts per million equivalent)
<50	Not detected at or above laboratory detection limit
--	Not analyzed
NE	Not established
N/A	Not applicable
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020/602
MTBE	Methyl-tert-butyl-ether by EPA Method 8260M/8260B, except by EPA Method 8020 for the 1998 sampling event
TBA	Tert-butyl alcohol by EPA Method 8260M/8260B
DIPE	Di-isopropyl ether by EPA Method 8260M/8260B
ETBE	Ethyl tert-butyl ether by EPA Method 8260M/8260B
TAME	Tert-amyl methyl ether by EPA Method 8260M/8260B
Lead	Dissolved lead by EPA Method 7421

Environmental screening levels (ESLs) were taken from the San Francisco Bay Region, Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* Table F1-b with ESL updates and corrections, where groundwater IS NOT a current or potential source of drinking water

TPHd: ESL for TPH (middle distillates)
TPHmo: ESL for TPH (residual fuels)
TPHg: ESL for TPH (gasoline)

Detail

1 The initial samples from Wells MW-1 through MW-9 were analyzed for organic lead by DHC LUFT Method. Analytical results were ND (<2,000 µg/L).

2 The 12/13/90 sample from Well MW-1 was also analyzed for chloride by EPA Method 300 and total dissolved solids (TDS) by EPA Method 160.1 Analytical results were 15,000 milligrams per liter (mg/L) chloride and 27,000 mg/L TDS.

3 During the 02/27/98 and 06/23/98 groundwater sampling events, the groundwater samples were collected without purging the wells prior to sampling. Thus, these samples grab samples of groundwater from the wells.

4 The laboratory reported the hydrocarbon pattern present in the requested fuel quantitation range does not resemble the fuel pattern.

5 The laboratory reported the results in the diesel organics range are primarily due to overlap from a heavy oil range product.

6 The laboratory reported the results in the diesel organics range are primarily due to overlap from a gasoline range product.

7 The Laboratory reported the positive result for petroleum hydrocarbons as diesel appears to be due to the presence of heavier hydrocarbons rather than diesel.

8 The laboratory reported the positive result for petroleum hydrocarbons as diesel appears to be due to a combination of heavier and lighter hydrocarbons rather than diesel.

9 According to the laboratory, the results was analyzed outside of the EPA recommended holding time.

10 According to the laboratory, the TPHg result consists almost exclusively or primarily of MTBE.

Table 3
Past Groundwater Analytical Results for Groundwater Monitoring Wells,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Notes (Continuation):
Source

9/12/90: Sierra Environmental Services (SES, September 28, 1990): *"Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

12/13/90: SES (January 7, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

3/13/91: SES (April 3, 1991): *"Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford, Mill Valley, California."*

6/12/91: SES (July 10, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

9/12/91: SES (October 7, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

1992-1993: SES (May 26, 1993): *"5 Ashford, Mill Valley, California."*

2/27/98: EnviroNet Consulting (EnviroNet, April 1, 1998): *"Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California."*

6/23/98: EnviroNet (August 24, 1998): *"Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California."*

10/4/00: Environmental Resource Group, Inc. (ERG, December 8, 2000): *"Ground Water Monitoring Report for October 2000, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

3 & 6/01: ERG (September 2001): *"Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

12/11/01: ERG (February 2002): *"Ground Water Monitoring, 4th Quarter 2001, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

2002: ERG (February 2003): *"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

6/25/03: ERG (September 2003): *"Ground Water Monitoring, 2nd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

9/25/03: ERG (December 2003): *"Ground Water Monitoring, 3rd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

11/4/03: ERG (March 2004): *"Ground Water Monitoring, 4th Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

3/24/04: ERG (May 2004): *"Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

6/14/04: ERG (October 2004): *"Ground Water Monitoring, 2nd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

9/24/04: ERG (January 2005): *"Ground Water Monitoring, 3rd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

Table 4.
Past Grab Groundwater Analytical Results for Borings,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Sample	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	TBA	MTBE	DIPE	ETBE	TAME
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
HP-1 [3]	04/30/01	**310** [1]	<50	<0.5	<0.5	<0.5	<1.5	<250	**310**	<10	<10	<10
HP-2	04/30/01	<50	<50	<0.5	<0.5	<0.5	<1.5	<25	**42**	<1.0	<1.0	<1.0
HP-3	04/30/01	**2,100** [1]	<50	<0.5	**0.67**	**0.92**	**4.1**	<1,000	**2,100**	<50	<50	**130**
HP-4	04/30/01	**240** [1]	<500	<0.5	<0.5	<0.5	<1.5	<100	**240**	<5.0	<5.0	**12**
HP-5	04/30/01	<50	<50	<0.5	**0.60**	<0.5	<1.5	<25	**2.1**	**5.8**	<1.0	<1.0
HP-6	04/30/01	**86** [2]	<50	<0.5	<0.5	**0.80**	**3.9**	<25	**78**	<1.0	<1.0	**3.4**
HP-7	04/30/01	**1,300** [1]	**1,200**	<10	<10	<10	<20	<1,000	**1,300**	<50	<50	<50
SF Bay RWQCB Environmental Screening Levels (Table F-1b)												
Gross Contamination Ceiling Value		5,000	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE
Estuary Aquatic Habitat Goal		500	640	46	130	290	100	8,000	18,000	NE	NE	NE

Notes:

General

µg/L	Micrograms per liter (parts per billion equivalent)
mg/L	Milligrams per liter (parts per million equivalent)
<50	Not detected at or above laboratory detection limit
NE	Not established
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
Oxygenates	Methyl-tert-butyl-ether (MTBE), tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE) and tert-amyl methyl ether (TAME) by EPA Method 8260M

Environmental screening levels (ESLs) were taken from the San Francisco Bay Region, California Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* with ESL updates and corrections. Table F1-b where groundwater IS NOT a current or potential source of drinking water

TPHd: ESL for TPH (middle distillates) TPHg: ESL for TPH (gasoline) TPHg: ESL for TPH (gasoline)

Detail

1	According to the laboratory, the TPHg result consists exclusively of MTBE.
2	According to the laboratory, the TPHg result consists primarily of MTBE.
3	Sample HP-1 was analyzed for volatile organic compounds (VOCs) by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, TPH as motor oil by EPA Method 8015M, and cadmium, chromium, lead, nickel plus zinc by EPA Method 3050/6010. Analyticals were: ND (<2.0 µg/L) for VOCs, ND (<0.33 to 1.5 µg/L) for SVOCs, ND (<200 µg/L) for TPHmo, and ND (<0.05 to 0.10 mg/L) for metals.

Source

Environmental Resource Group (September 2001): *"Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

Table 5: Past Soil Analytical Results for Drainage Ditch and Tidal Creek Area,
5 Ashford Avenue, Mill Valley, CA

Sampling Location	Sample Area	Sample Date	Sample ID	Sample Depth	Lead	TPHmo	TPHd	TPHg	BTEX	MTBE [1]
				(inches bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Drainage Ditch										
Transect C-3 (Below Box Culvert)	North Bank	11/11/02	C-3-A	0 to 6	**44**	<100	<5.0	<1.0	<0.005	<2.0
	North Bank	11/11/02	C-3-B	0 to 6	**120**	**42**	<5.0	<1.0	<0.005	<2.0
	Ditch Bed	11/11/02	C-3-C	0 to 6	**70**	**170**	**41**	<1.0	<0.005	<2.0
	Ditch Bed	04/30/01	C-3-2'	24.0	**650**	**150**	**130**	<1.0	<0.005	**2.6**
	Ditch Bed	04/30/01	C-3-4'	48.0	**62**	<100	**13**	<1.0	<0.005	<2.0
	South Bank	11/11/02	C-3-D	0 to 6	**25**	<100	<5.0	<1.0	<0.005	<2.0
	South Bank	11/11/02	C-3-E	0 to 6	**34**	<100	<5.0	<1.0	<0.005	<2.0
Transect C-6 (Above Box Culvert)	East End	11/11/02	C-6-A	0 to 6	**640**	**580**	**87**	<1.0	<0.005	<2.0
		11/11/02	C-6-B	0 to 6	**560**	**350**	**63**	<1.0	<0.005	<2.0
		11/11/02	C-6-C	0 to 6	**530**	**330**	**47**	<1.0	<0.005	<2.0
		11/11/02	C-6-D	0 to 6	**120**	**190**	**21**	<1.0	<0.005	<2.0
		11/11/02	C-6-E	0 to 6	**1,200**	**430**	**75**	<1.0	<0.005	<2.0
TOTAL NUMBER OF SAMPLES: 12										
1) Environmental Screening Levels (SF Bay RWQCB, February 2005)										
Residential, Non-Drinking Water Resource (Table B-1)					150	500	100	100	0.18 B, 9.3 T, 32 E, 11 X	8.4
Commercial/Industrial, Non-Drinking Water Resource (Table B-2)					750	1,000	500	400	0.38 B, 9.3 T, 32 E, 11 X	8.4
2) Background Maximum (Shacklette & Boerngen, 1984)					48	N/A	N/A	N/A	N/A	NA
3) Sediment Screening Guidelines (SF Bay RWQCB, May 2000)										
Recommended Wetland Surface Material (< 3 feet bgs)					43.2	NE	NE	NE	NE	NE
Probable Effect Levels					218	NE	NE	NE	NE	NE

Table 5: Past Soil Analytical Results for Drainage Ditch and Tidal Creek Area,
5 Ashford Avenue, Mill Valley, CA

Sampling Location	Sample Area	Sample Date	Sample ID	Sample Depth	Lead	TPHmo	TPHd	TPHg	BTEX	MTBE [1]
				(inches bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tidal Creek										
Location C-1	Creek Bed (Upstream)	11/11/02	C-1	0 to 6	**11**	**20**	<5.0	<1.0	<0.005	<2.0
		04/30/01	C-1-2'	24.0	**5.1**	<100	**16**	<1.0	<0.005	<2.0
		04/30/01	C-1-4'	48.0	**9**	<100	**18**	<1.0	<0.005	<2.0
Location C-2	Creek Bed	11/11/02	C-2	0 to 6	**20**	**46**	<5.0	<1.0	<0.005	<2.0
		04/30/01	C-2-2'	24.0	**34**	<100	**13**	<1.0	<0.005	**3.0**
		04/30/01	C-2-4'	48.0	**6.1**	<100	<5.0	<1.0	<0.005	<2.0
Location C-4	Creek Bed (Downstream)	11/11/02	C-4	0 to 6	**35**	<100	<5.0	<1.0	<0.005	<2.0
		04/30/01	C-4-2'	24.0	**11**	<100	**23**	<1.0	<0.005	<2.0
		04/30/01	C-4-4'	48.0	**25**	<100	**14**	<1.0	<0.005	<2.0
Location C-5	Creek Bed (Downstream)	04/30/01	C-5-2'	24.0	**41**	**100**	**41**	<1.0	<0.005	<2.0
		04/30/01	C-5-4'	48.0	**26**	<100	<5.0	<1.0	<0.005	<2.0
Transect C-7	West Bank	11/11/02	C-7-A	0 to 6	**24**	**28**	<5.0	<1.0	<0.005	<2.0
	West Bank	11/11/02	C-7-B	0 to 6	**40**	<100	<5.0	<1.0	<0.005	<2.0
	Creek Bed	11/11/02	C-7-C	0 to 6	**11**	**40**	<5.0	<1.0	<0.005	<2.0
	East Bank	11/11/02	C-7-D	0 to 6	**36**	<100	**30**	<1.0	<0.005	<2.0
	East Bank	11/11/02	C-7-E	0 to 6	**140**	**140**	<5.0	<1.0	<0.005	<2.0
Location C-8	Creek Bed (Upstream)	11/11/02	C-8	0 to 6	**13**	**66**	**35**	<1.0	<0.005	<2.0
TOTAL NUMBER OF SAMPLES: 17										
1) Environmental Screening Levels (SF Bay RWQCB, February 2005)										
Residential, Non-Drinking Water Resource (Table B-1)					150	500	100	100	0.18 B, 9.3 T, 32 E, 11 X	8.4
Commercial/Industrial, Non-Drinking Water Resource (Table B-2)					750	1,000	500	400	0.38 B, 9.3 T, 32 E, 11 X	8.4
2) Background Maximum (Shacklette & Boerngen, 1984)					48	N/A	N/A	N/A	N/A	NA
3) Sediment Screening Guidelines (SF Bay RWQCB, May 2000)										
Recommended Wetland Surface Material (< 3 feet)					43.2	NE	NE	NE	NE	NE
Probable Effect Levels					218	NE	NE	NE	NE	NE

Table 5: Past Soil Analytical Results for Drainage Ditch and Tidal Creek Area,
5 Ashford Avenue, Mill Valley, CA

Notes:

General

mg/kg:	Milligrams per kilogram
NA:	Not analyzed
N/A:	Not applicable
NE:	Not established
Sample Depth:	Depth in inches below ground surface, bgs
TPHg:	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd:	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo:	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX:	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
MTBE:	Methyl tert-butyl ether by EPA Method 8260M for the April 2001 and November 2002 samples
Lead:	Total lead by EPA Method 6010

Screening Levels: 1) Environmental screening levels (ESLs) published by the San Francisco Bay Region, Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* incorporating ESL updates and corrections.
Table B-1 ESLs correspond to shallow soil, residential land use and Table B-2 ESLs to shallow soil, commercial/industrial land use, both where groundwater IS NOT a current or potential drinking water resource.
TPHd: ESL for TPH (middle distillates) TPHmo: ESL for TPH (residual fuels) TPHg: ESL for TPH (gasoline)

2) Shacklette, H. T. and Boerngen, J. G. (1984): *"Element Concentrations in Soils and Other Surficial Materials, Conterminous United States,"* U. S. Geological Survey Professional Paper 1270. Data represent upper estimate of regional background.

3) SF Bay RWQCB (May 2000): *"Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines,"* Draft Staff Report, May 2000

Detail

1 The April 2001 samples were analyzed for the other fuel oxygenates besides MTBE, namely tert-butyl alcohol (TBA), tert-amyl methyl ether (TAME), ethyl tert-butyl ether (ETBE), and di-isopropyl ether (DIPE). Analytical results indicated no detectable levels of TBA, TAME, ETBE and DIPE above reporting limits.

Source

April 2001: Environmental Resource Group, Inc. (ERG, September 2001): *"Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

November 2002: ERG (February 2003): *"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

ATTACHMENT A

California Regional Water Quality Control Board
San Francisco Bay Region

Alan C. Lloyd, Ph.D.
Agency Secretary

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

Alfa Investments
Attn: Mr. Ali Baum
C/o Ali Hansia
153 Donahue Street, #23
Sausalito, CA 94965

Date: September 13, 2005
UST File No.: 21-0079 (JMJ)

Alfa Investments
Attn: Mr. Farook Hansia
570 Redwood Highway
Mill Valley, CA 94941

SUBJECT: Requirement for a Technical Report for Alfa Gas Station, 5 Ashford Avenue, Mill Valley, Marin County

Dear Mr. Baum and Mr. Hansia:

The purpose of this letter is to require you to submit a technical report summarizing the residual soil concentrations at the site. Water Board staff have reviewed your July 2005, *"Closure Report"* for the subject site. This closure report indicates that the residual groundwater concentrations are low and do not pose a threat to human health or water quality. This closure report also indicates that elevated concentrations of lead above regulatory screening levels remain in soils and sediments in and adjacent to the drainage canal and creek bank. The closure report concluded that:

1. Most of the highly elevated residual lead are located above the drainage ditch culvert with significantly decreasing concentrations further downstream.
2. Much of the elevated lead are attributable to pollution from automobiles traveling along adjacent Blithedale Avenue.

The Water Board cannot make a determination that the site is a closure candidate without the following information: a summary of the residual soil pollution remaining at the site and a comparison of the on-site lead concentration with the elevated lead concentrations found in the drainage ditch/creek areas. As the owner and/or operator of the subject site, you are required to submit a technical report pursuant to Section 13267 of the California Water Code. **The required technical report is due in this office by October 25, 2005, and shall consist of a report that (1) summarizes all of the residual soil pollution left at the site, (2) summarizes the soil lead concentration at the service station site, and (3) compares the on-site service station lead results with the results of the elevated lead concentrations found in the drainage ditch/creek areas**. This technical report should make conclusions and recommendations as to

whether it is appropriate to issue a closure letter for the site or whether additional investigation and/or remediation is necessary.

This requirement for a technical report is made pursuant to Water Code Section 13267, which allows the Board to require technical reports from persons whose activities may have an impact on water quality. The attachment provides more information about Section 13267 requirements. Any extension in the above deadline must be confirmed in writing by Board staff.

All workplans, reports, and correspondence are to be submitted to the Water Board, with a copy sent to Mr. Greg Mobley of the Marin County Office of Waste Management. Include the Water Board file number shown in the heading of this letter.

Please direct all questions and correspondence regarding this matter to John Jang of my staff at (510) 622-2366 (email address jmj@rb2.swrcb.ca.gov).

Sincerely,

Bruce H. Wolfe
Executive Officer

Enc.: Fact Sheet – Requirements For Submitting Technical Reports Under Section 13267 of the California Water Code (revised August 2005)

cc w/o enc.:
Shari Knieriem, SWRCB, UST Cleanup Fund Unit (email sknieriem@waterboards.ca.gov)
Sunil Ramdass, SWRCB, UST Cleanup Fund Unit (email sramdass@waterboards.ca.gov)

Mr. Greg Mobley (email gmobley@co.marin.ca.us)
Marin County Office of Waste Management
P. O. Box 4186
San Rafael, CA 94913-4186

Armando Alegria (email aalegria@co.marin.ca.us)
Marin County Health Dept.
3501 Civic Center Drive, Room 236
San Rafael, CA 94903

Mr. Ben Wells (emails bwells@environmentalrg.com and ergroup@earthlink.net)
Environmental Resource Group
1038 Redwood Highway, Suite 1
Mill Valley, CA 94941

Alan C. Lloyd, Ph.D.
Agency Secretary

California Regional Water Quality Control Board

San Francisco Bay Region

Arnold Schwarzenegger
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Fact Sheet – Requirements For Submitting Technical Reports Under Section 13267 of the California Water Code

What does it mean when the regional water board requires a technical report?
Section 13267[1] of the California Water Code provides that "…the regional board may require that any person who has discharged, discharges, or who is suspected of having discharged or discharging, or who proposes to discharge waste...that could affect the quality of waters...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires."

This requirement for a technical report seems to mean that I am guilty of something, or at least responsible for cleaning something up. What if that is not so?
The requirement for a technical report is a tool the regional water board uses to investigate water quality issues or problems. The information provided can be used by the regional water board to clarify whether a given party has responsibility.

Are there limits to what the regional water board can ask for?
Yes. The information required must relate to an actual or suspected or proposed discharge of waste (including discharges of waste where the initial discharge occurred many years ago), and the burden of compliance must bear a reasonable relationship to the need for the report and the benefits obtained. The regional water board is required to explain the reasons for its request.

What if I can provide the information, but not by the date specified?
A time extension may be given for good cause. Your request should be promptly submitted in writing, giving reasons.

Are there penalties if I don't comply?
Depending on the situation, the regional water board can impose a fine of up to $5,000 per day, and a court can impose fines of up to $25,000 per day as well as criminal penalties. A person who submits false information or fails to comply with a requirement to submit a technical report may be found guilty of a misdemeanor. For some reports, submission of false information may be a felony.

Do I have to use a consultant or attorney to comply?
There is no legal requirement for this, but as a practical matter, in most cases the specialized nature of the information required makes use of a consultant and/or attorney advisable.

What if I disagree with the 13267 requirements and the regional water board staff will not change the requirement and/or date to comply?
You may ask that the regional water board reconsider the requirement, and/or submit a petition to the State Water Resources Control Board. See California Water Code sections 13320 and 13321 for details. A request for reconsideration to the regional water board does not affect the 30-day deadline within which to file a petition to the State Water Resources Control Board

If I have more questions, whom do I ask?
Requirements for technical reports indicate the name, telephone number, and email address of the regional water board staff contact.

Revised August 2005

[1] All code sections referenced herein can be found by going to www.leginfo.ca.go

ATTACHMENT B

Table B-1.
Soil Analytical Results From Tank Excavations,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Sample	Sample Location	Date	Sample Depth	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
			feet bgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Two 8,000-Gallon USTs Excavation										
T 1-T4 [1]	Composite	03/16/99	NR	**33**	--	**0.052**	**0.14**	**0.036**	**0.32**	**0.092**
WW-1-5'	West Wall	03/17/99	5	**6,100**	--	**17**	**35**	**85**	**180**	**40** [2]
SW-1-7'	South Wall	03/17/99	7	**8.9**	--	**0.053**	**0.044**	**0.026**	**0.170**	**0.790**
NW-1	North Wall	03/22/99	NR	**40**	--	**0.12**	**0.26**	**0.13**	**0.77**	**0.38**
WW-2	West Wall	03/22/99	4.5	**1.9**	--	**0.011**	**0.024**	<0.005	**0.015**	**0.54**
WW-3	West Wall	03/30/99	NR	**60**	--	<0.01	**0.54**	**0.1**	**0.57**	**0.65**
WW-4	West Wall	03/30/99	NR	<1.0	--	<0.005	<0.005	<0.005	<0.005	**0.039**
WW-5	West Wall	03/30/99	NR	**510**	--	**0.82**	**3.8**	**1.2**	**5.4**	**9.2**
Four 10,000-Gallon USTs Excavation										
EW-1-8'	East Wall	04/13/99	8	**4,100**	**7,400**	<2.0	**37**	**15**	**84**	<10
EW-2-8'	East Wall	04/13/99	8	<1.0	<5.0	<0.005	**0.007**	<0.005	**0.021**	<0.025
SW-2-7'	South Wall	04/13/99	7	**570** [3]	**19,000**	<1.0	**1.2**	<1.0	**6.2**	<5.0
NW-2-7'	North Wall	04/13/99	7	**64**	**47**	<0.20	<0.20	<0.20	<0.60	<1.0
NW-3-7'	North Wall	04/14/99	7	**66** [3]	**1,800**	<0.20	<0.20	<0.20	<0.60	<1.0
NW-4-7.5'	North Wall	04/14/99	7.5	**510** [3]	**13,000**	<0.50	**2.4**	<0.50	**7.5**	<2.5
SW-4-7'	South Wall	04/14/99	7	**61** [3]	**370**	<0.005	<0.005	<0.005	<0.015	<0.025
SW-3-7'	South Wall	04/14/99	7	**1.5**	**18**	<0.005	**0.007**	**0.037**	**0.023**	<0.025

Notes:

General:

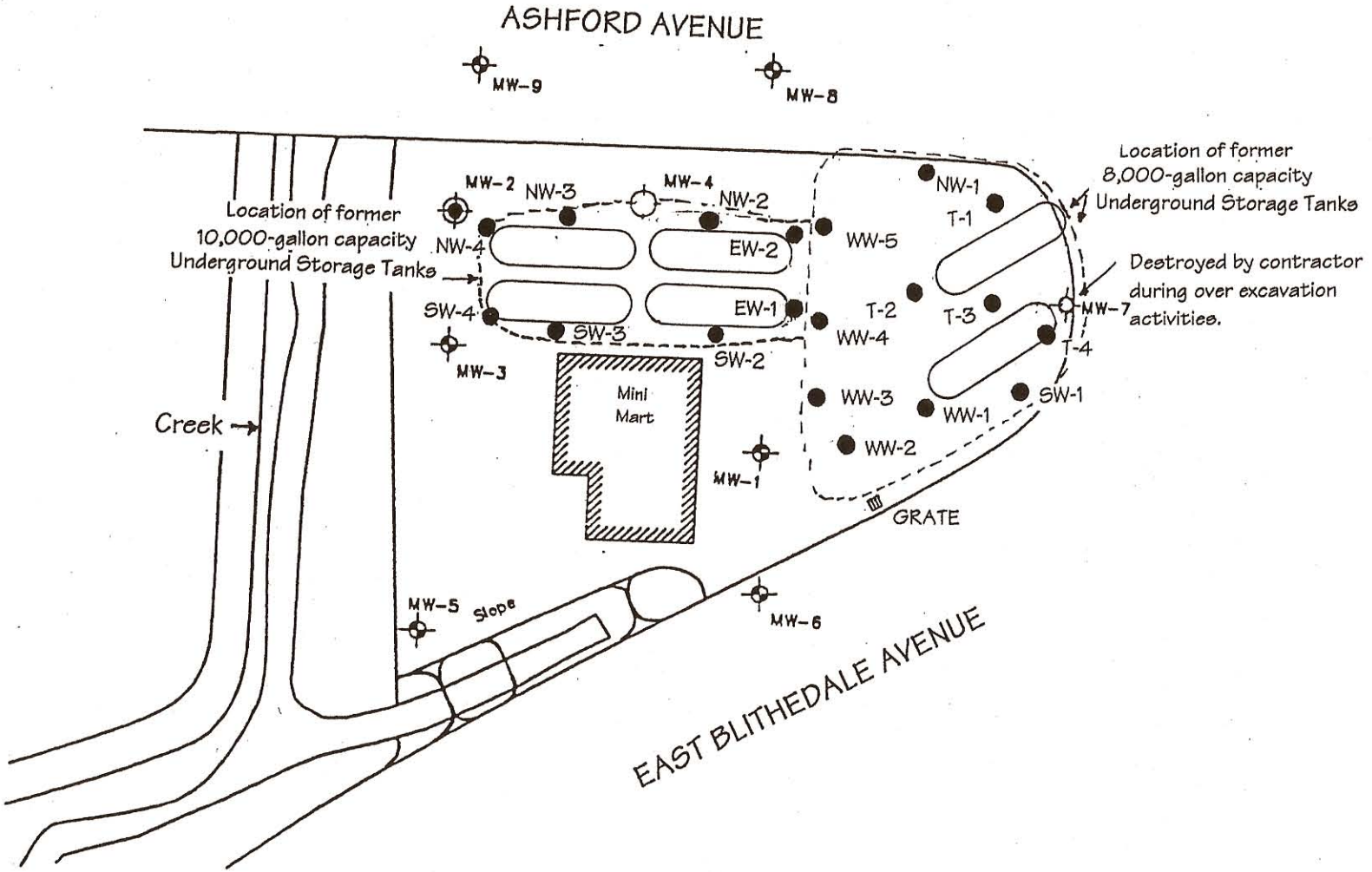
mg/kg	Milligram per kilogram (parts per million equivalent)
<50	Not detected at or above laboratory detection limit
--	Not analyzed
feet bgs	Sample depth in feet below ground surface
NR	Not reported
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
MTBE	Methyl-tert-butyl-ether by EPA Method 8020
	Block of soil represented by sample was apparently over-excavated (EGS, June 14, 1999; ERG, September 2001)

Detail

1	Sample T 1-4 represents a four (4) point composite of discrete soil samples collected from the tank excavation. The composite was also analyzed for total lead via EPA Method 7420. Analytical results were 11 mg/kg.
2	The laboratory reported that the MTBE result was confirmed by GC/MS, EPA Method 8260.
3	The laboratory reported that the TPHg analysis is impacted by a hydrocarbon pattern that is characteristic of diesel. The TPHd analysis is a more accurate representation of the total hydrocarbon contamination.

Source

Environmental Geology Services (June 14, 1999): "*Interim remedial Action, 5 Ashford Avenue, Mill Valley, California.* "



ENVIRONMENTAL GEOLOGY SERVICES Santa Rosa, California	LIMITS OF OVEREXCAVATION March 29, 1999 5 Ashford Avenue, Mill Valley, California	Monitoring Well Location ----- Limits of Excavation ● Soil Sample Locations Approximate Scale: 1" = 30'	PLATE Plate B-1

ATTACHMENT C

Table C-1: Soil Analytical Results, 1990 Remedial Action at Drainage Ditch, 5 Ashford Avenue, Mill Valley, CA

Sampling Location	Sample Area	Sample Date	Sample ID	Sample Depth	Lead	TOG	TPHmo	TPHd	TPHg	BTEX
				(inches bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Drainage Ditch (Pre-Excavation)										
Location A1	North Bank	09/07/90	A-1-4"	4.0	**17**	**4,100**	**9,000**	**1,900**	<1	<0.0025
Location A1	North Bank	09/07/90	A-1-10"	10.0	**57**	**25,000**	**1,200**	**460**	**1.9**	<0.0025
Location A1	North Bank	09/07/90	A-1-20"	20.0	**110**	**20,000**	**1,400**	**780**	**1.1**	<0.0025
Location A2	North Bank	09/07/90	A-2-4"	4.0	**550**	**16,000**	**2,500**	**530**	<1	<0.0025
Location A2	North Bank	09/07/90	A-2-10"	10.0	**630**	**13,000**	**1,100**	**410**	<1	<0.0025
Location A2	North Bank	09/07/90	A-2-20"	20.0	**420**	**14,000**	<10	**1,000**	**140**	**0.19 T, 0.22 E, 0.45 X**
Location A3	North Bank	09/07/90	A-3-4"	4.0	**380**	**18,000**	<10	**310**	<1	<0.0025
Location A3	North Bank	09/07/90	A-3-10"	10.0	**500**	**4,500**	**380**	<1	**7.1**	<0.0025
Location A3	North Bank	09/07/90	A-3-20"	20.0	**66**	**4,100**	**220**	**55**	**8.2**	<0.0025
Location C1	Ditch Bed	09/12/90	C-1-4"	4.0	**200**	**5,600**	**70**	<1	<1	<0.0025
Location C1	Ditch Bed	09/12/90	C-1-10"	10.0	**130**	**6,000**	**680**	<1	**1.3**	<0.0025
Location C1	Ditch Bed	09/12/90	C-1-20"	20.0	**80**	**6,000**	**250**	<1	<1	<0.0025
Location B1	North Bank	09/07/90	B-1-4"	4.0	**260**	**33,000**	**7,800**	**2,000**	**1.2**	<0.0025
Location B1	North Bank	09/07/90	B-1-10"	10.0	**38**	**17,000**	**2,600**	**510**	**1.1**	<0.0025
Location B1	North Bank	09/07/90	B-1-20"	20.0	**60**	**7,300**	**410**	**58**	<1	<0.0025
Location B2	North Bank	09/07/90	B-2-4"	4.0	**560**	**13,000**	**1,100**	<1	<1	<0.0025
Location B2	North Bank	09/07/90	B-2-10"	10.0	**260**	**8,600**	**620**	<1	<1	<0.0025
Location B2	North Bank	09/07/90	B-3-4"	4.0	**240**	**11,000**	**340**	<1	<1	<0.0025
Location C2	Ditch Bed	09/12/90	C-2-4"	4.0	**190**	**5,300**	**170**	<1	**1.9**	<0.0025
Location C2	Ditch Bed	09/12/90	C-2-10"	10.0	**170**	**5,900**	**160**	<1	<1	<0.0025
Location C2	Ditch Bed	09/12/90	C-2-20"	20.0	**65**	**5,900**	**21**	<1	<1	<0.0025
1) Environmental Screening Levels (SF Bay RWQCB, February 2005)										
Residential, Non-Drinking Water Resource (Table B-1)					150	N/A	500	100	100	0.18 B, 9.3 T, 32 E, 11 X
Commercial/Industrial, Non-Drinking Water Resource (Table B-2)					750	N/A	1,000	500	400	0.38 B, 9.3 T, 32 E, 11 X
2) Background Maximum (Shacklette & Boerngen, 1984)					48	N/A	N/A	N/A	N/A	N/A
3) Sediment Screening Guidelines (SF Bay RWQCB, May 2000)										
Recommended Wetland Surface Material (< 3 feet)					43.2	NE	NE	NE	NE	NE
Probable Effect Levels					218	NE	NE	NE	NE	NE

Table C-1: Soil Analytical Results, 1990 Remedial Action at Drainage Ditch, 5 Ashford Avenue, Mill Valley, CA

Sampling Location	Sample Area	Sample Date	Sample ID	Sample Depth	Lead	TOG	TPHmo	TPHd	TPHg	BTEX
				(inches bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Drainage Ditch (Post-Excavation)										
Locations #1, #4 and #6	North Bank	10/17/90	S-1	24.0	**390**	**1,700**	**860**	<1	<1	NA
	North Bank	10/17/90	S-4	24.0	**350**	**800**	**340**	**65**	**1.2**	NA
	North Bank	10/17/90	S-6	24.0	**120**	**730**	**1,000**	**180**	<1	NA
Location #8	Ditch Bed	10/17/90	S-8	24.0	**190**	**1,400**	**950**	<1	<1	NA
1) Environmental Screening Levels (SF Bay RWQCB, February 2005)										
Residential, Non-Drinking Water Resource (Table B-1)					150	N/A	500	100	100	0.18 B, 9.3 T, 32 E, 11 X
Commercial/Industrial, Non-Drinking Water Resource (Table B-2)					750	N/A	1,000	500	400	0.38 B, 9.3 T, 32 E, 11 X
2) Background Maximum (Shacklette & Boerngen, 1984)					48	N/A	N/A	N/A	N/A	N/A
3) Sediment Screening Guidelines (SF Bay RWQCB, May 2000)										
Recommended Wetland Surface Material (< 3 feet bgs)					43.2	NE	NE	NE	NE	NE
Probable Effect Levels					218	NE	NE	NE	NE	NE

Notes:

General

mg/kg: Milligrams per kilogram (parts per million equivalent)
N/A: Not applicable
NE: Not established
Sample Depth: Sample depth in inches below ground surface, bgs
TPHg: Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd: Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo: Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
TOC Total organic carbon by EPA Method 9060
TOG Non-polar oil and grease by EPA Method 5520E/F
BTEX: Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
Block of soil represented by sample was subsequently excavated and removed (SES, November 1990)

Screening Levels: 1) Environmental screening levels (ESLs) published by the San Francisco Bay Region, California Regional Water Quality Control Board (SF Bay RWQCB, February 200
"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater," incorporating ESL updates and corrections.
Table B-1 ESLs correspond to shallow soil, residential land use and Table B-2 to shallow soil, commercial/industrial land use, both where where groundwater IS NOT a current or potential drinking water resource.
TPHd: ESL for TPH (middle distillates) TPHmo & TOG: ESL for TPH (residual fuels) TPHg: ESL for TPH (gasoline)
2) Shacklette, H. T. and Boerngen, J. G. (1984): *"Element Concentrations in Soils and Other Surficial Materials, Conterminous United States,"* U. S. Geological Survey Professional Paper 1270. Data represent upper estimate of regional background
3) SF Bay RWQCB (May 2000): *"Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines,"* Draft Staff Report, May 2000

Source

September 1990: Sierra Environmental Services (SES, September 28, 1990): *"Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*
October 1990: SES (November 1990): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

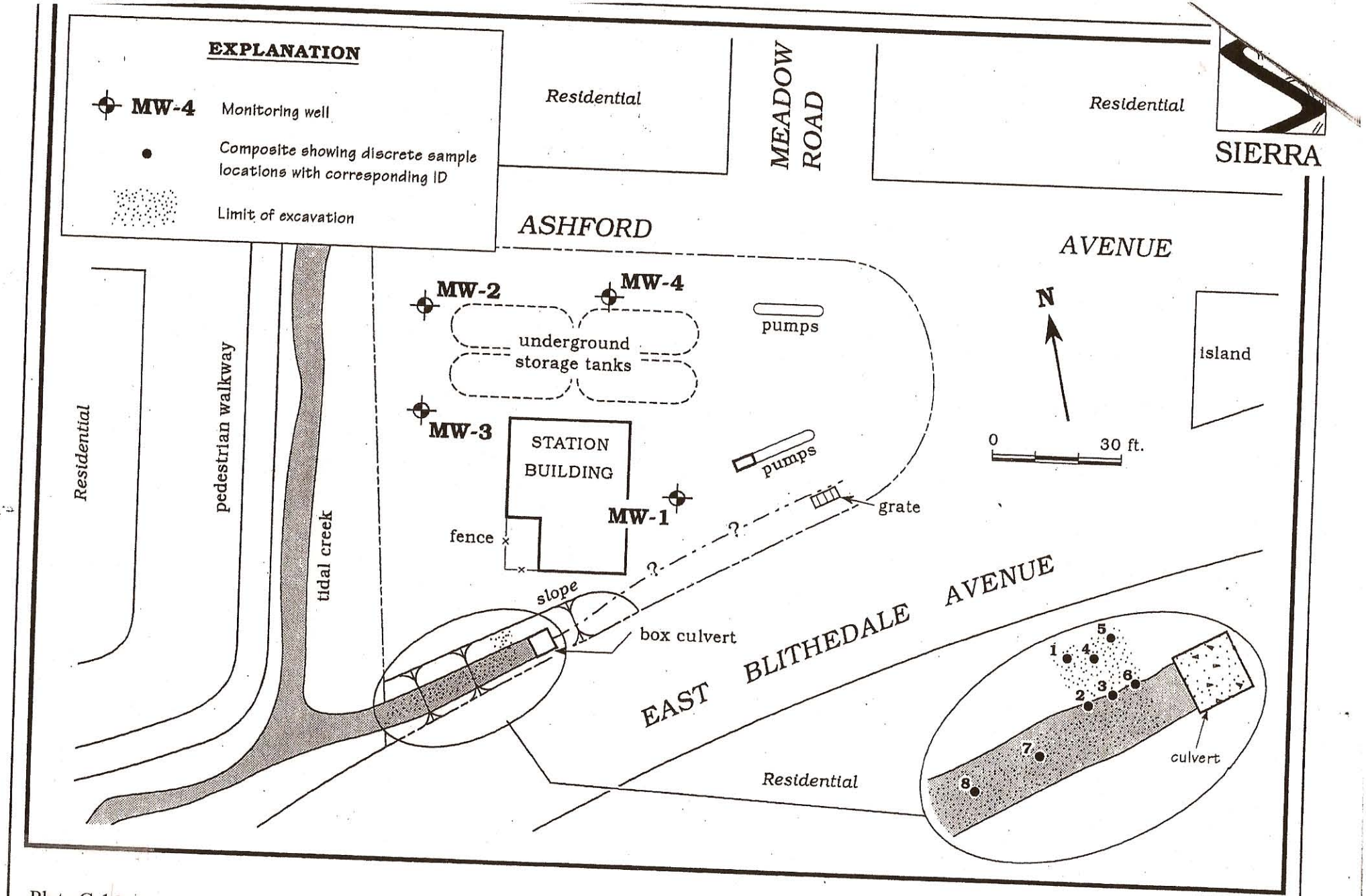


Plate C-1 Excavation Limits and Soil Sample Locations - Redwood Oil Company - 5 Ashford Avenue, Mill Valley, California

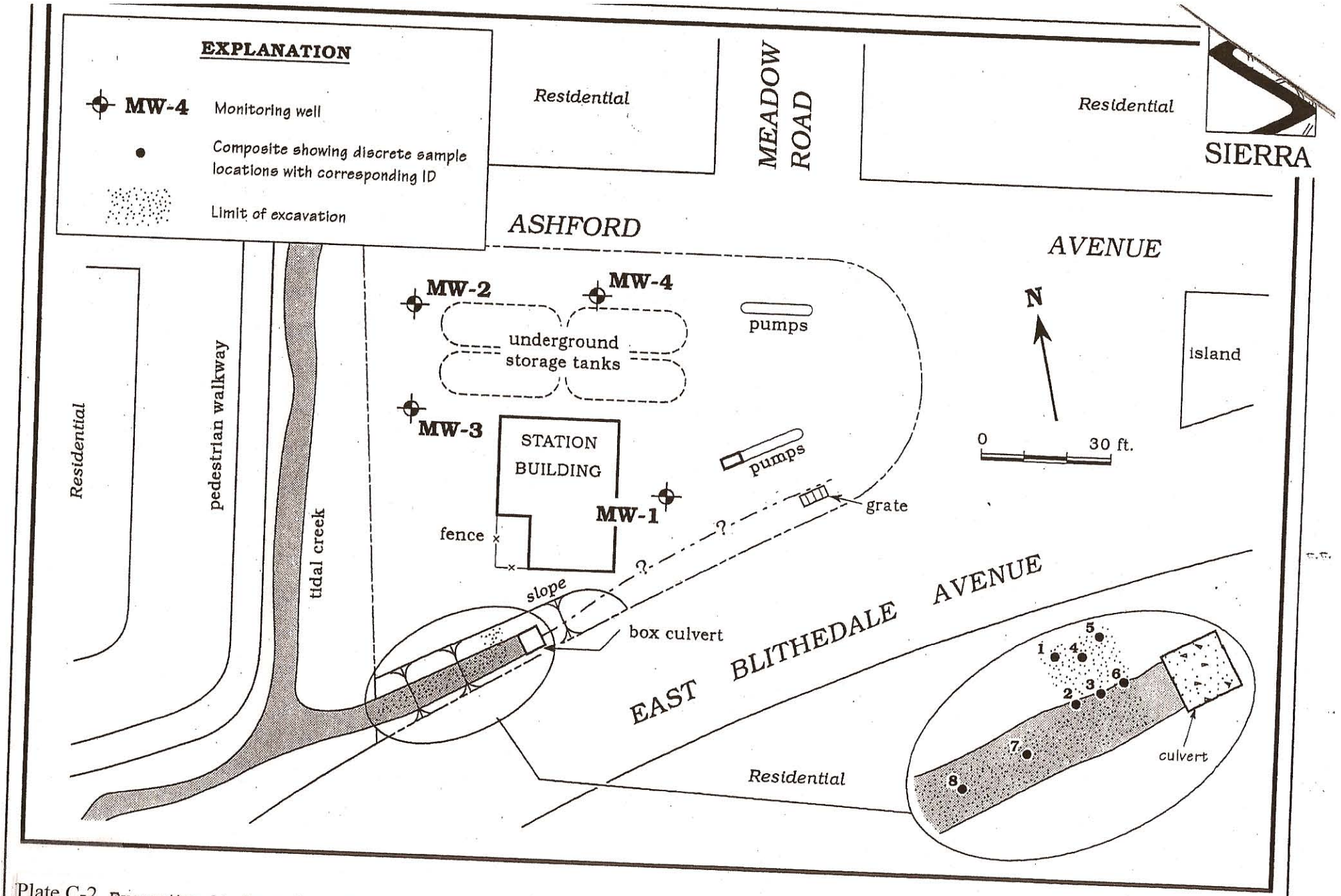


Plate C-2 Excavation Limits and Soil Sample Locations - Redwood Oil Company - 5 Ashford Avenue, Mill Valley, California